

HOW THE GROUP LEADERS OF LESSON PREPARATION GROUPS  
FACILITATE GROUP LEARNING AND REFLECTIVE PRACTICE  
IN CHINESE PUBLIC HIGH SCHOOLS

by

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## ABSTRACT

### HOW THE GROUP LEADERS OF LESSON PREPARATION GROUPS FACILITATE GROUP LEARNING AND REFLECTIVE PRACTICE IN CHINESE PUBLIC HIGH SCHOOLS

Xuejiao Lin

Previous studies of lesson preparation groups (LPG; *beikezu*) have not dealt with the impact of LPG on teachers' reflective practice. This qualitative case study was an exploration of LPG group leaders' (*beike zuzhang*) facilitation of LPG meetings (*beike zuhui*) to gain insights on reflective practices in LPG meetings.

The study involved 54 participants: 29 participants (LPG group leaders and teachers) were interviewed and observed; 20 participants (teachers) were observed; and 5 participants (school leaders) were interviewed. In addition to in-depth interviews and on-site observations, two questionnaires were used to expose a holistic picture of group learning and reflection in LPG meetings.

The results indicate school leaders' perceptions and values of reflective practices have an influence on the interdependence of LPG group leaders' preparation and facilitation of meeting content and teachers' attitudes and engagement toward reflection in LPG meetings. School leaders expected teachers to engage in reflection inside and outside of LPG meetings, but teachers' practices were not aligned with school leaders' expectations, given the differing understandings of LPG goals. Schools did not have evaluative plans for reflection in LPG meetings. LPG group leaders prepared teachers to understand the upcoming week teaching content and progress. However, LPG group leaders lacked facilitation skills for encouraging reflective group discussions. They were also reluctant to deal with group dynamics challenges proactively. Teachers' experiences of reflection depended on the purpose of meetings and meeting agendas. Teachers were more likely to engage in reflective discussions with colleagues when LPG meetings involved clear purposes, guiding questions, constructive feedback, and guided future actions.

The creating reflective practice in LPG meetings model was proposed to address the interdependence between stakeholders, with the mindsets and skillsets needed for LPG group leaders and teachers. The research results represent a step toward developing school-based reflective practice professional learning communities (PLCs).

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For Mom, Dad, and George

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## TABLE OF CONTENTS

	Page
Chapter I – INTRODUCTION .....	1
Background and Context.....	1
Education System in China.....	1
Modern Education Reform in China.....	1
Current Curriculum Reform and the Impacts on Teachers.....	4
Teacher Preparation in China.....	4
School-Based Teaching and Research Activities ( <i>jiaoyan huodong</i> ).....	7
Teaching Research Groups ( <i>jiaoyanzu</i> ).....	9
Outcome of School-Based Teaching and Research Activities ( <i>jiaoyan huodong</i> ) .....	10
Problem Statement.....	12
Research Purpose and Research Questions.....	12
Approach.....	13
Anticipated Outcomes.....	14
Researcher Perspectives.....	15
Assumptions.....	15
Rationale and Significance .....	16
Definition of Terms.....	16
 Chapter II – LITERATURE REVIEW .....	 19
Topic I. Teachers Learning in Professional Learning Communities .....	21
Conceptualizing Professional Learning Communities.....	21
Professional Learning Communities in China .....	22
School-Based Teaching and Research Activities ( <i>jiaoyan huodong</i> ) in China.....	24
Heads of teaching research groups ( <i>jiaoyan zuzhang</i> ).....	26
Types of school-based teaching and research activities ( <i>jiaoyan huodong</i> ) in China. ....	27
Lesson preparation group meeting ( <i>beike zuhui</i> ). ....	28
Challenges in Developing and Sustaining PLCs in China.....	31
Topic II. Reflective Practice in Teacher Learning.....	33
Defining Reflective Practice .....	33
Reflection and critical reflection.....	34
Reflection in workplace learning.....	37
Kember et al.’s reflection questionnaire .....	38
Reflective Practice in Schools .....	40
Topic III. Facilitation of Teacher Learning .....	41
Defining Facilitation .....	41
Facilitating Small Teams .....	42

Use of collegial inquiry.....	42
Use of protocols.....	43
Conceptual Framework.....	43
Chapter III – METHODOLOGY.....	46
Rationale for Qualitative Research Design.....	47
Rationale for Case Study Methodology.....	48
Overview of Research Sample.....	49
Overview of Information Needed.....	50
Contextual Information.....	50
Demographic Information.....	51
Perceptual Information.....	52
Theoretical Information.....	53
Overview of the Research Steps.....	54
Methods of Data Collection.....	57
Interviews.....	58
Observations.....	59
Questionnaires.....	62
Data Analysis and Synthesis.....	63
Document Preparation.....	63
Interview data.....	63
Observation data.....	64
Demographic data.....	64
Inventory data.....	64
Documents.....	64
Analytical Process.....	64
First step.....	64
Second step.....	64
Third step.....	65
Fourth step.....	65
Fifth step.....	65
Sixth step.....	65
Ethical Considerations.....	66
Validity and Reliability in Qualitative Research.....	66
Construct Validity.....	66
Internal Validity.....	67
External Validity.....	67
Reliability.....	67
Limitations.....	68
Researcher Bias.....	69
Chapter Summary.....	69

Chapter IV – FINDINGS .....	71
Description of the Context .....	72
School Profiles .....	73
School 1 .....	73
Group formation.....	74
Selection of LPG Group Leaders .....	74
School 2 .....	75
Group formation.....	75
Selection of LPG Group Leaders .....	75
Group Profiles .....	77
LPG Group Leaders’ Profiles .....	78
Findings From Interviews .....	79
Significance and Assessment of Reflection and Reflective Practice from	
School Leaders’ Perspectives .....	80
Finding #1. Goals of LPG .....	81
Finding #2. Expected reflection moments .....	82
Reflection during LPG meetings .....	82
Written reflection in the teaching plan booklet.....	84
Reflection during open lesson debrief sessions .....	85
Finding #3. Training for LPG group leaders .....	85
Finding #4. Assessment plans of reflection. ....	87
LPG Group Leaders’ Preparation and Facilitation of LPG Meetings.....	87
Finding #5. Meeting preparation.....	88
Finding #6. Discussion format and content .....	90
Discussion format .....	90
Discussion content .....	92
Finding #7. Discussion challenges from teachers’ perspectives.....	94
Lack of advance preparation.....	94
Lack of in-depth discussion. ....	96
Finding #8. Facilitation challenges from LPG group leaders’	
perspectives.....	98
Teachers’ Experience of Reflection in LPG Meetings .....	100
Finding #9. Reflection in LPG meetings. ....	100
Emergent Findings .....	102
Emergent finding #1. Reflection moments from teachers’	
perspectives.....	102
Open lesson debrief sessions. ....	102
Post exam analysis. ....	103
Self-dependent reflection. ....	105
Emergent finding #2. Discussion outside LPG meetings .....	105
Emergent finding #3. Communication chain .....	107
Findings From Questionnaires .....	109
Group Learning Survey.....	109
Comparison of individual questions by component.....	111

Team learning outcomes .....	111
Team learning processes: framing and reframing.....	111
Team learning processes: integrating perspectives.....	112
Team learning conditions: individual expression .....	112
Team learning conditions: operating principles.....	112
Reflection Questionnaire .....	113
Comparison of individual questions by scale .....	114
Habitual action .....	114
Understanding .....	114
Reflection .....	115
Critical reflection .....	115
Findings From Observations.....	116
Hypothetical Scenarios of LPG Meetings.....	116
Hypothetical Scenario of Open Lesson Debrief Session .....	117
Chapter Summary .....	117
 Chapter V – ANALYSIS OF FINDINGS .....	 120
Analysis.....	121
Participant Groups .....	121
Analysis I. School Leaders’ Perceptions and Values of School-Wide Reflective Practice and Teachers’ Group Learning .....	 122
Inconsistencies in the meeting duration.....	122
Inconsistencies in the LPG meetings’ tasks.....	124
Inconsistencies in the reflection moments .....	126
Analysis II. LPG Group Leaders’ Preparation and Facilitation of the LPG Meetings.....	 127
Influenced by the understanding of the role .....	127
Influenced by perceived willingness and interests to collaborate.....	129
Analysis III. Teachers’ Attitudes and Engagement Toward Reflection in LPG Meetings .....	 133
Chapter Summary .....	137
 Chapter VI – DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS.....	 139
Interpretative Discussion .....	141
Reflection Inside LPG Meetings.....	141
The Group Learning Conditions in LPG Meetings.....	145
Trust .....	145
Group norms .....	146
Conclusions.....	147
Conclusion 1 .....	147
Conclusion 2 .....	148
Conclusion 3 .....	148
Revised Conceptual Framework.....	149

Recommendations .....	152
Recommendations for Future Research .....	152
General research.....	152
Research based on demographic information .....	153
Recommendations for School Leaders and School Administrators .....	154
Recommendations for LPG Group Leaders.....	155
Researcher Assumptions Revisited.....	156
Assumption 1 .....	156
Assumption 2 .....	157
Assumption 3 .....	157
Assumption 4 .....	158
Assumption 5 .....	158
Reflections on the Study .....	159
 REFERENCES .....	 161
 APPENDICES	
Appendix A – Bilingual Informed Consent and Participant Rights – School Leaders...	170
Appendix B – Bilingual Informed Consent and Participant Rights – LPG Group Leaders .....	176
Appendix C – Bilingual Informed Consent and Participant Rights – Teachers .....	182
Appendix D – Bilingual Demographic Inventory – School Leaders.....	188
Appendix E – Bilingual Demographic Inventory – LPG Group Leaders.....	189
Appendix F – Bilingual Demographic Inventory – Teachers.....	190
Appendix G – Bilingual Group Learning Survey .....	191
Appendix H – Bilingual Reflection Questionnaire.....	194
Appendix I – Observation Protocol .....	196
Appendix J – Interview Protocol - LPG Group Leaders.....	197
Appendix K – Interview Protocol - Teachers .....	199
Appendix L – Interview Protocol - School Leaders .....	201
Appendix M – Bilingual Coding Scheme.....	203
Appendix N – Demographic Profile of Study Participants Among All Groups.....	205
Appendix O – Item Analysis of Group Learning Survey .....	207
Appendix P – Item Analysis of Reflection Questionnaire.....	209
Appendix Q – Observation Thumbnail Sketches.....	210
Appendix R – Bilingual Quotations of Perceived LPG Group Leaders’ Role .....	212
Appendix S – Group Variations in Approach to Central Speaker’s Role and Reflection in Meetings.....	214
Appendix T – Consistency Chart of Findings, Interpretations, Conclusions, and Implications.....	216

## LIST OF TABLES

Table	Page
1	Types of Teaching and Research Activities ( <i>jiaoyan huodong</i> )..... 28
2	Information Collection ..... 53
3	Participants Completed the Inventories ..... 57
4	Interviewed Participants..... 57
5	Mapping of Research Questions and Interview Questions ..... 60
6	Demopgrahic Information of School Leaders in School 1 ..... 74
7	Demographic Information of School Leaders in School 2 ..... 75
8	An Overview of Demographic Information of School 1 and School 2 ..... 76
9	Age Distribution of Study Participants Among All Groups ..... 79
10	Findings for Research Category #1..... 80
11	Findings for Research Category #2..... 88
12	Findings for Research Category #3..... 100
13	Overview of Means, Standard Deviations and Percentage of Responses in Group Learning Survey..... 110
14	Overview of Means, Standard Deviations and Percentage of Responses in Reflection Questionnaire ..... 114
15	Findings Summary ..... 118
16	Demographic Information in Participant Groups ..... 121
17	Summary of Guidelines ..... 123
18	Group Variation in Meeting Duration..... 124
19	Expected Reflection Moments vs. Mentioned Reflection Moments ..... 126
20	Quotations of Perceived LPG Group Leaders' Role..... 130
21	Group Variation in Task Allocation ..... 131

22	Group Variation in Apporach to Central Speaker's Role and Reflection in Meetings.....	135
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## LIST OF FIGURES

Figure		Page
1	Literature Map .....	20
2	Conceptual Framework.....	45
3	Discussion Content in LPG Meetings of All Groups.....	95
4	Original Conceptual Framework.....	150
5	Revised Conceptual Framework: Creating Reflective Practice in LPG Meetings Model .....	151



## Chapter I

### INTRODUCTION

#### **Background and Context**

##### **Education System in China**

China has the largest education system in the world (Chen & Day, 2014).

According to the National Bureau of Statistics of China, as of 2018, there were 13,737 public senior secondary schools (including general public high schools, vocational high schools, and specialized secondary schools) and 6,290,000 teachers (with qualifications) in secondary schools: 3,640,000 teachers in junior secondary schools, and 2,650,000 teachers in senior secondary schools. With such an enormous workforce, any changes to the education system and any changes to the mindset and teaching practices of teachers create inevitable challenges.

In 1986, the Ministry of Education (MOE) issued the 9 Years' Compulsory Education Law, which authorized children between ages six and 15 to receive compulsory education opportunities. Although there are 12 years of school structured for Chinese students, only 9 years of school are compulsory, including primary education (Grade 1 to Grade 6) and junior secondary education (Grade 7 to Grade 9; Feng, 2010; Neuhaus, 2014). Senior secondary education is optional for students who want to pursue

further education. Students who want to attend senior secondary school are required to pass local entrance examinations (Feng, 2010). In China, secondary education consists of 3 years of junior secondary education and 3 years of senior secondary education. There are two types of senior secondary schools: (a) general schools and (b) vocational schools. General schools prepare students to enter university, whereas vocational schools prepare students to work immediately upon graduation (Lai, 2010).

The central government in Beijing holds the absolute power to regulate and manage schools across China. Under the central government, there are 23 provinces, five autonomous regions, and four municipalities. Each province, region, and municipality has unique culture and economic development (Neuhaus, 2014; Y. Wang, 2016).

### **Modern Education Reform in China**

China is one of the largest and fastest developing countries in the world. With rapid economic growth, the quality of education in China has received great attention globally. The public has critiqued and questioned the effectiveness of preparing 21st-century competencies through exam-oriented education (Y. Wang, 2016). The concept of “quality education,” also known as *suzhi jiaoyu* in Chinese, was developed in the 1990s, and it has continued to be the guiding principle of education reform (Chen & Day, 2014; Qian et al., 2017). The word *suzhi* refers to the students’ individual characteristics, and the *suzhi jiaoyu* curriculum reforms attempt to “cultivate creative and independent thinking skills, integrated practical skills, teamwork, and co-operation” (Dello-Iacovo, 2009, p. 243).

In 2001, the Chinese MOE initiated country-wide curriculum reform in the basic education system, including elementary and junior secondary education levels (Lai, 2010;

H. Yin, 2014). The purpose of the reform has been to develop students holistically rather than developing great test takers (Bai, 2017; Qian et al., 2017). Secondary education in China consists of 3 years of junior high school (*junior secondary education*) and 3 years of senior high school (*senior secondary education*; Lai, 2010; H. Yin, 2014). Following the changes in junior high school, in 2003, the MOE proposed new curriculum guidelines for the senior secondary education, with aims to move from *teacher-centered* education to *student-centered* education (Lai, 2010; H. Yin, 2014). In 2004, four provinces in China tested out the new curriculum guidelines in senior secondary education schools. By 2011, all 31 provinces in China were required to implement senior secondary education (H. Yin, 2014). The curriculum reform aims to prepare students for the 21st century. Implementing new curriculum reform policies and changing the mindset and practices of teachers can be challenging for many reasons, including the great size of the population (Chen & Day, 2014). In 2013, there were 98.6 million students enrolled in 255,400 primary schools, and 94.2 million students enrolled in 81,662 secondary schools (Y. Wang, 2016).

With rapid changes in the field of education, a reexamination of the quality of teacher education—including teacher preparation programs, in-service programs, and school-based learning programs—seems to be inevitable in China. In 2011, when the National Standards for Teacher Education Programs was introduced, the concept of reflection became an essential element for teacher education programs in universities (Hu & Cui, 2012). Teachers should be reflective practitioners (Hu & Cui, 2012). The quality of teachers is the most important factor in students' learning and achievement outcomes (Han, 2012). The successful implementation of curriculum reform relies heavily on the

teachers. However, the prospective teachers “receive inadequate training in learning how to teach, they are not familiar with the new curriculum, and they have not experienced the multiple instructional strategies that they are supposed to utilize in their classrooms” (Zhou, 2014, p. 516).

Because unresolved problems in the teacher education process may jeopardize the quality of teacher preparation, it is necessary to examine alternative ways teachers engage and make changes to their teaching practices on the job. Numerous researchers have suggested school-based professional development experiences may be more effective when situated in school contexts (Camburn, 2010; Lakerveld & Nentwig, 1996; Opfer & Pedder, 2011).

### **Current Curriculum Reform and the Impacts on Teachers**

In responding to the global trend of cultivating 21st-century competencies, China has been undertaking a series of curriculum reforms since 2001 in basic education, affecting primary education and junior secondary education (Chen & Day, 2014). In 2003, the Curriculum Plan on General Senior Secondary Education (experimental phase) was introduced, and the curriculum reform was introduced in four provinces in 2004, including Guangdong province, Hainan province, Ningxia province, and Shandong province (Lai, 2010). The MOE initiated the curriculum reform to transition from teacher-centered pedagogy to student-centered pedagogy at senior high schools (Han, 2012).

With the recent and continuous curriculum reform in China, how teachers change and adapt their mindsets and teaching methodologies to meet ongoing needs and trends require attention. Whenever curriculum reform occurs, teachers encounter difficulties in

complying with new expectations, rules, and guidelines (Neuhaus, 2014). Lai (2010) explored teachers' perceptions of their work under curriculum reform. Teachers reported they encountered a variety of difficulties in implementing the curriculum reform.

The curriculum reform in 2001 required teachers to develop new mindsets about their work and to take greater senses of ownership of teaching and learning. Lai (2010) conducted a qualitative research study to gain a deeper understanding of teachers' perceptions under the curriculum reform in China. The author picked a senior secondary school from Guangdong province, where she conducted 12 semi-structured, in-depth interviews with the heads of key academic units, subject panel heads, and teachers. Lai (2010) found teachers were expected to understand teachers and students should construct knowledge collectively, rather than "one-sided knowledge instillation by the teacher" (p. 619). To meet these expectations, teachers need to change their roles to become facilitators (Lai, 2010).

### **Teacher Preparation in China**

Although the Chinese government has implemented a series of education reforms for teacher education in China in response to the continuous reforms at the basic education and secondary education levels, the teacher education process has not changed much, and many problems remained unresolved (Zhou, 2014). Teacher education is classified into preservice and in-service. Preservice refers to the "training a teacher candidate receives prior to entering the classroom" (Neuhaus, 2014, p. 34), whereas in-service refers to the "training a teacher receives while teaching" (Neuhaus, 2014, p. 34). Teachers receive preservice training through their education at universities, but the

teacher education system in China does not provide teachers with adequate preparation to practice in the classroom (Guo, 2005).

Guo (2005) explored the historical development of teacher education in China and called for urgent corrective actions. Guo used two sources of data: (a) 12 interviews and (b) library research in English and Chinese. Guo (2005) identified three major issues regarding teacher education for elementary and secondary schools in China: (a) courses are theoretical and abstract; (b) teaching practice is too short; and (c) pedagogical training is weak. Guo concluded, “Current teacher education programs are narrowly designed, with a rigid curriculum, excessive focus on subject training, and insufficient emphasis on teaching skills” (p. 81).

In the same vein, Liao and Hu (2017) conducted a case study with six Chinese mathematics teachers and “identified the affordances and limitations of a typical academically oriented teacher preparation in today’s China” (p. 628). They used semi-structured interviews and observation with these six mathematics teachers who graduated from Mathematics Educators – Secondary, one of the most selective programs in preparing mathematics teachers in China. Liao and Hu (2017) concluded even in this top program in China, participants did not feel prepared in pedagogical strategies. Although participants were well equipped with subject matter knowledge, they did not feel confident in engaging students to learn in the classroom.

Similarly, in an article on teacher education changes in China from 1974 to 2014, Zhou (2014) argued, “Teacher education reconstruction reform did not respond to the requirements of new teacher types and new professional development” (p. 515). Teaching universities are unlikely to prepare teachers to meet expectations for a qualified teacher

and cultivate students for the 21st century. Zhou (2014) elaborated on the problems in the teacher education process by citing a 2011 study of 192 undergraduate teacher education programs across 30 universities and colleges. These teacher education programs prepared students to work in various occupations, such as teachers, counselors, administrators, etc. Among these 192 programs, only four programs provided courses relevant to the basic education curriculum reform (Zhou et al., 2011, as cited in Zhou, 2014).

Besides formal education in teacher universities, teachers are required to receive regular professional development training as part of the National Teacher Training Project (NTTP); however, teachers reported the training content was too theoretical and provided little application to the classroom setting (Liu et al., 2016). Liu et al. (2016) conducted a study to portray the status quo of teacher training in China. They used four methods: (a) interviews, (b) surveys, (c) observations, and (d) document reviews. The interview data came from 12 teachers, eight principals, three government officials, and four individual training institutions. The Shaanxi provincial NTTP office provided the administrative data from the year of 2011 to 2013 to help the research team to evaluate “the prevalence of teacher training opportunities and to assess how teacher training targets are set and implemented across Shaanxi Province” (Liu et al., 2016, p. 8). The survey data included data from 2014 NTTP and other teacher training in two prefectures of Shaanxi province. The research team also observed NTTP training sessions to get a sense of the ways trainings were delivered.

Liu et al. (2016) reported four findings about the status quo of teacher training in China. First, most teachers participated in NTTP training in online formats rather than through in-person training. The quality of such online training was unknown. Second,

there were compliance problems; for example, the training subjects were not fully aligned with the government policy. Third, some trainers were college professors. Teachers perceived the content was too theoretical to understand and apply in the workplace. Last, teachers and principals did not perceive the NTTP to be effective. The ineffectiveness of the current NTTP raised concerns that impacted the quality of teacher development.

### **School-Based Teaching and Research Activities (*jiaoyan huodong*)**

School-based learning for teachers in the workplace has a long history in China.

Marsick (1987) defined workplace learning as:

the way in which individuals or groups acquire, interpret, reorganize, change or assimilate a related cluster of information, skills and feelings. It is also primary to the way in which people construct meaning in their personal and shared organizational lives. (p. 4)

According to this definition, school-based learning is considered as workplace learning for teachers. Schools are considered the primary location for teachers to develop their professional competencies because learning should be situated in their workplace (Wong & Tsui, 2007). There are many types of school-based teaching and research activities (*jiaoyan huodong*) for teachers in China, including (a) mentoring, (b) open lesson (*gongkaike*), (c) collective lesson preparation (*beikezu*), (d) lesson observations and post lesson conferencing, (e) monthly/weekly learning activities, and (d) self-reflection reports (Wong & Tsui, 2007). Through these channels, novice teachers have access to professional advice to enhance their pedagogical skills and subject knowledge. A recent study reported that China is the only country that promotes teachers' professional development with formal procedures in the school context (Harris et al., 2009, as cited in Qian et al., 2017).



The MOE requires all schools in China to form subject-based teaching research groups (TRGs; Qian et al., 2017). Principals at these schools rely on the heads of TRGs to be responsible for the activities (Qian et al., 2017; Yuan & Zhang, 2016). This mandatory approach triggers numerous contextual challenges that affect the authenticity of collaboration. These challenges include heavy workload, lack of motivation, internal competition, and conflict avoidance (Yuan & Zhang, 2016). Many teachers perceive attending these activities as a duty for the sake of their job security. They also argue that these activities do not meet their needs due to the standardized content and the teachers' varying years of teaching experiences (Wong & Tsui, 2007). For example, when teachers are at different levels of professional growth, their learning needs may be different. If the leader does not take into consideration individual needs and design content based on shared interests and learning styles, the participants engagement level might be affected.

### **Teaching Research Groups (*jiaoyanzu*)**

The TRGs are responsible for organizing the school-based teaching and research activities (*jiaoyan huodong*), including organizing collective teacher learning and promoting peer collaboration (Qian et al., 2017). This practice has been part of the organizational structure within schools for over 50 years, and it was “borrowed from the Soviet Union since the 1950s” (Qian et al., 2017, p. 189). The collective culture of China, its specific schooling system, and the socio-cultural context have influenced and contributed to the persistence of the teaching research system in schools (Yuan & Zhang, 2016). Since 1952, the MOE has required all Chinese schools to implement TRGs to ensure the quality of teaching practices and provide opportunities for teachers to support each other's learning (Hu, 2011; Qian et al., 2017). The essential purpose of TRGs is to

improve teaching competence (Paine & Ma, 1993). The TRGs also assist teachers in producing reports and cases of exemplary lessons, which contributes to the process of professional recognition (Hu & Gao, 2012).

There are several subject-based TRGs in each school, and they meet weekly or bi-weekly to discuss teaching practices (Wong, 2015). The heads of TRGs (*jiaoyan zuzhang*) are usually outstanding subject teachers who are determined by the principals and are the mid-level leaders in schools' structure. Principals assign extensive instructional power to the heads of TRGs to organize teaching and research activities (*jiaoyan huodong*) in their subject departments (Qian et al., 2017). There is a mix of experienced teachers and novice teachers in each TRG: the experienced teachers are the “parents” of the TRG, and the novice teachers are the “babies” of the group who require care and guidance (Qian et al., 2017).

The TRGs are perceived as a collaborative platform for teachers' professional development. The major challenge of this collaborative effort is this practice has remained at the surface level and has not produced substantial development for teachers (Yuan & Zhang, 2016). For instance, some teachers come to TRGs to share lesson plans without further discussion. Open and genuine communication has been reported as missing, and teachers are not motivated to participate in collective ways due to the lack of effort from heads of TRGs (Yuan & Zhang, 2016). For example, collective LPG meetings (*beike zuhui*) are an opportunity for experienced teachers to instruct novice teachers on how to teach through concentration on the mastery of teaching techniques and sharing teaching materials (Lieberman & Miller, as cited in Lai, 2010, p. 628). Teachers have also reported the structure of collaborative learning and lead to conformity rather than to

change (Paine & Ma, 1993). The absence of authentic collaboration jeopardizes the quality of school-based learning activities. Wong and Tsui (2007) concluded there are two reasons teachers hesitate to share openly in a collaborative learning environment: “keeping good teaching methodologies to themselves and being unwilling to share with others and avoiding jeopardizing interpersonal rapport with other colleagues by not pinpointing others’ teaching problems” (p. 465). Teachers value the importance of maintaining a harmonious environment. Consequently, teachers are not engaged in authentic learning, reflection, and dialogue (Lai, 2010).

### **Outcome of School-Based Teaching and Research Activities (*jiaoyan huodong*)**

Numerous researchers have supported the argument that professional learning activities for teachers should focus on reflective practice (Cranton, 1996, 2016; Drago-Severson, 2009; Wu & Zhou, 2003). By engaging in reflective practice, teachers can improve their practices and ultimately enhance student learning (Drago-Severson, 2009). Reflection and dialogue are vital elements of school structured learning activities. Teachers must become learning educators to deal with constant changes and uncertainties in this field. They can achieve this by engaging in reflection and dialogue regularly and collaboratively (Hirsch & Killian, 2008, as cited in Drago-Severson, 2009). Due to the continuous curriculum reform in China, high expectations are set for TRGs to develop teachers’ teaching practices and pedagogy. Some schools are redesigning their structures and approaches to emphasize the importance of continuous learning and reflection.

## **Problem Statement**

Most researchers have studied functions and roles of TRGs (Du, 2013; Hu, 2011, 2012, 2013), team development and knowledge conversion among teachers' collaboration (Wong, 2015; Yuan & Zhang, 2016), types and usefulness of teaching and research activities (*jiaoyan huodong*), principals' influence on teacher development under curriculum reform (Qian & Walker, 2013; Qian et al., 2016; Qian et al., 2017), and teachers' perceptions of these activities (Wong & Tsui, 2007). The LPG meetings are the most common activity that the teachers participate regularly. The problem addressed in this study is to the lack of research on the ways the LPG leaders facilitate reflective practice in LPG meetings.

Little research has been done on the ways the LPG group leaders facilitate reflective practice to meet high expectations set in curriculum reform. The National Standards for Teacher Education Programs sets the expectations for teachers to become reflective practitioners (Hu & Cui, 2012). Thus, it is necessary to examine the ways LPG leaders facilitate reflective practice through their interaction with teachers in ways that support teacher professional development.

## **Research Purpose and Research Questions**

In this exploratory qualitative case study, the researcher sought to inform the practice of LPGs to improve facilitating reflective practice through LPG meetings in Chinese public high schools. The purpose of this study was to discover how a sample of LPG group leaders facilitated LPG meetings and to shed light on the current state of

reflective practice in a sample of LPG meetings. The researcher obtained qualitative data from participants in Chinese public high schools from two schools.

The overarching research question was: What are the perceptions of reflective practice for LPG meetings among the school leaders, LPG group leaders, and teachers?

The other research questions that guided this study were:

1. How, if at all, do school leaders value and evaluate reflective practice in LPG meetings?
2. How do LPG group leaders prepare and facilitate LPG meetings with teachers?
3. How do teachers experience the actions of LPG group leaders in facilitating reflective practice in their LPG meetings? Do they report reflecting critically on their work as a result of their reflective practice in LPG meetings and, if so, what helped them to do so?

### **Approach**

This exploratory qualitative case study primarily involved in-depth interviews with LPG group leaders, their respective teachers, and school leaders from a sample of Chinese public high schools in a city of Guangdong province in mainland China. The researcher conducted formal and semi-structured interviews with 11 LPG group leaders, 18 teachers, and five school leaders from two schools. Interviews were recorded and transcribed verbatim and coded for themes. Two other data collection methods were used to achieve triangulation: (a) field observation notes were taken by researcher observer during observations in LPG meetings to document practices and behaviors that could not be obtained through the interview data; and (b) two validated surveys—Group Learning

Survey (GLS) and Reflection Questionnaire (RQ)—were filled out by the LPG group leaders and their respective teachers to extend the findings further.

The researcher used purposeful sampling strategy to identify (a) LPG group leaders, (b) LPG group leaders' respective teachers, and (c) school leaders, who met the following criteria:

The participant *LPG group leaders* met the following criteria:

- worked at a public high school in the Guangdong province of mainland China
- taught subject matter courses on a regular basis
- facilitated LPG meetings.

The participant *teachers* met the following criteria:

- worked at a public high school in the Guangdong province of mainland China
- taught subject matter courses on a regular basis
- participated in the LPGs that were facilitated by the LPG group leaders of this study.

The participant *school leader(s)* met the following criteria:

- worked in the same public high school as the *LPG group leaders*.

### **Anticipated Outcomes**

The researcher anticipated the outcomes of this study would yield considerable insights in three areas:

1. understanding of how the LPG group leaders make sense of their roles and the process they use to facilitate learning with teachers;

2. some competencies that the LPG group leaders perceive they needed to develop to facilitate reflection and critical reflection through LPG meetings;
3. how reflective practice was assessed through LPG meetings by school leaders.

### **Researcher Perspectives**

The researcher has been a practitioner in the teacher professional development field since 2011. She has extensive experience in designing and facilitating professional learning programs for K-12 teachers in mainland China. She holds a bachelor's degree in adult and organization development from Temple University and a master's degree in adult learning and leadership from Columbia University. These experiences have catalyzed the researcher's motivation and interests in teacher professional development and how school-based learning programs can enhance and transform the teaching profession.

### **Assumptions**

With an integrated understanding of the literature and experiences in the field, the researcher held five major assumptions for this study:

1. LPG group leaders incorporate reflection, critical reflection, and meaningful dialogue while they facilitate LPG meetings.
2. LPG group leaders are self-directed and lifelong learners who are intrinsically motivated to enhance their teaching practices along the way.
3. LPG group leaders take an active and collaborative approach to work with fellow teachers.

4. Teaching practice is improved by the teacher's reflective practice.
5. LPG group leaders' meeting facilitation requires supportive practices by their school leaders.

### **Rationale and Significance**

The rationale for this study was based on the researcher's desire to assist LPG leaders to better facilitate LPG meetings. This research guides the LPG leaders in facilitating LPG meetings and provides guidelines for novice teachers in developing essentials skills to become leaders of LPG in the future. The study offers descriptive accounts of how school leaders should support LPGs to create a culture and mechanisms that model and support reflective practice. The researcher provides recommendations to schools on the selection and development of the LPG leaders and the strategies to create a culture of reflective practice through LPG meetings.

### **Definition of Terms**

The researcher used several key terms throughout this study, and the following definitions conceptualize these terms for this study:

**Critical Reflection:** "Critical reflection involves thinking and problem solving. Problem solving is a process in which capable individuals attempt to make sense of a challenging situation, identify areas of practice needing scrutiny, define goals for improvement, and pursue actions to accomplish them. Reflective practitioners use this process to modify and enhance their understanding of professional practice" (Yost et al., 2000, p. 40).



**Facilitation:** “Facilitation is concerned with encouraging open dialogue among individuals with different perspectives so that diverse assumptions and options may be explored” (Hogan, 2002, p. 10).

**Group Leaders of Lesson Preparation Group (*beike zuzhang*):** LPG group leaders are the people who are responsible for preparing and leading the LPG meetings.

**Heads of Teaching Research Groups (*jiaoyan zuzhang*):** Heads of TRG are the people who are responsible for designing and facilitating the teaching and research activities in TRG.

**Lesson Preparation Group meetings (*beike zuhui*):** LPG meetings is where teachers in the same grade who teach the same subject come together to discuss lessons and teaching practices.

**Professional Development:** “[P]rofessional development is a process of professional growth, in which teachers examine their own practices to construct their own theories of teaching” (Keiny, 1994, as cited in Lai, 2010, p. 616).

**Reflection:** Reflection is “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends” (Dewey, 1933, p. 9).

**Reflective Practice:** Reflective practice is “a deliberate pause to assume an open perspective, to allow for higher-level thinking processes. Practitioners use these processes for examining beliefs, goals, and practices, to gain new or deeper understandings that lead to actions that improve learning for students. Actions many involve changes in behaviors, skills, attitudes, or perspectives within an individual, partner, small group, or school” (York-Barr et al., 2001, p. 6).

**Teacher Education:** Teacher education includes pre-service and in-service teachers' professional development activities (Hu & Cui, 2012).

**Teaching Research Groups (*jiaoyanzu*):** TRGs refer to the school-based learning communities that are subject-based with the purpose to improve teacher learning and performance (Paine & Ma, 1993).

**School-based Teaching and Research Activities (*jiaoyan huodong*):** School-based teaching and research activities refer to the activities organized by the TRGs that include both “regularly developed learning activities and some innovative action research programs formulated with the support of external experts” (Zhang & Wong, 2018, p. 122).

## Chapter II

### LITERATURE REVIEW

The researcher identified the purpose of this study in Chapter I - discover how a sample of group leaders of Lesson Preparation Groups (LPGs, *beike zuzhang*) facilitated the Lesson Preparation Group meetings (LPG meetings, *beikezuhui*), and to shed light on the current state of reflective practice in a sample of LPG meetings. To carry out the purpose, the researcher provides a critical review of existing literature related to the three primary areas of this study: (a) the education system in China, (b) teacher learning in China, and (c) reflective practice in teacher learning. Figure 1 is the literature map on the topics related to this study.

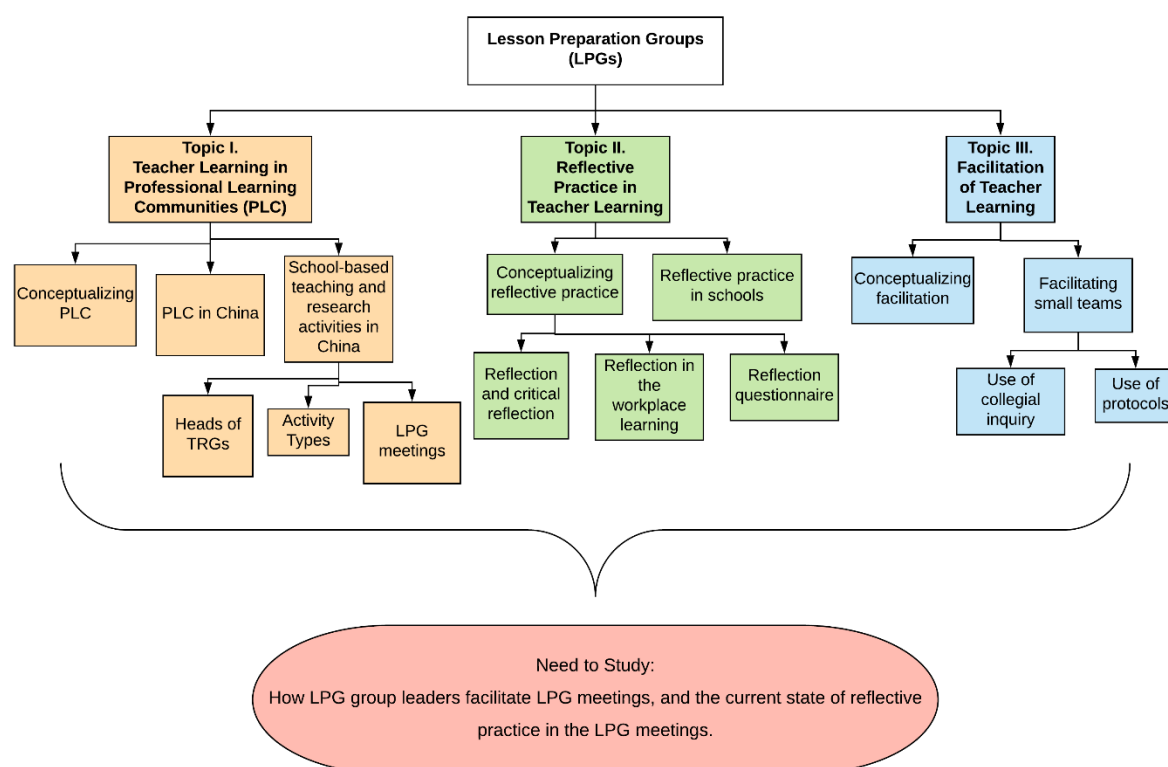
Topic I, teacher learning in professional learning communities (PLCs), includes subsections on conceptualizing PLCs, PLCs in China, and school-based teaching and research activities in China. Topic II, reflective practice in teacher learning, includes subsections on conceptualizing reflective practice and reflective practice in schools. Topic III, facilitation of teacher learning, includes subsections on conceptualizing facilitation and facilitating small teams.

The researcher searched each topic using both Internet search engines (Google and Google Scholar) and school databases (Chinese Academic Journal, ProQuest, JSTOR, etc.). The researcher gathered literature from 2000 to 2019, with selected, older

seminal articles relevant to the topics. Materials included relevant books, journal articles, dissertations, magazine articles. Search terms used include *China*, *education system*, *curriculum reform*, *school-based*, *professional learning communities*, *teacher teams*, *collaborative teams*, *reflective practice*, *reflection*, *facilitation*, and *teachers* in several combinations.

**Figure 1**

*Literature Map*



## **Topic I. Teachers Learning in Professional Learning Communities**

### **Conceptualizing Professional Learning Communities**

Over the past three decades, the concept of PLCs has been widespread, and the role of PLCs in improving teacher development and student achievement has considerably evolved (Kruse & Johnson, 2017). There is no universal definition of PLC, as various definitions and models have evolved over the years (DuFour et al., 2008; DuFour & Eaker, 1998; Hord, 1997; Louis & Marks, 1998; McLaughlin & Talber, 2006). Regardless of the various definitions, the well-acknowledged purpose of PLCs is to increase students learning by having teachers engage in collaborative work that centered on students' issues and needs (DuFour & DuFour, 2016). DuFour and Eaker (1998) defined PLCs as “educators [creating] an environment that fosters mutual cooperation, emotional support, and personal growth as they work together to achieve what they cannot accomplish alone” (p. xii).

Numerous authors (Blankenship & Ruona, 2007; Teague & Anfara, 2012) asserted that the concept of PLCs is derived from the theorists who study learning organizations (Senge, 2006) and communities of practice (Wenger, 1998; Wenger et al., 2002). The distinction between “organization” and community” is that the organization emphasized the organizational structures and organizational effectiveness, where the community stressed the common interests among group members (DuFour et al., 2008).

The construct of PLCs in Hord's seminal research (1997) received influential attention in the field of education (Zhang & Pang, 2016). Hord's (1997) model draws upon Senge's (2006) learning organization theory. According to Hord (1997, 2004), five dimensions define the boundaries of PLCs (Hord, 1997, 2004; Stoll, et al., 2006; Teague

& Anfara, 2012): (a) shared value and vision (that create the common purpose for teachers to work together); (b) shared and supportive leadership (principal leadership and distributed leadership); (c) supportive conditions (structural conditions such as time, place, resources, and relational conditions such as trust and respect); (d) collective learning (seek answers and solutions on students' challenges and needs through collaborative dialogues); and (e) shared practice (through peer observation, peer feedback, mentoring, etc). In Hord's (1997, 2004) model, reflective dialogue guides teachers' collaboration (Blankenship & Ruona, 2007).

### **Professional Learning Communities in China**

PLCs have a long history in China. Many school-based teaching and research activities in China are considered as PLCs (Paine & Fang, 2006); these activities are often organized by the groups called TRGs, LPG, and Grade Groups (*nianjizu*). These groups share similar characteristics outlined in Hord's research (1997, 2004), such as collective responsibility and teacher collaboration. However, the term "PLCs" has rarely been mentioned in the school context (Wong, 2010), and has seldom appeared in official education-related policy documents in China (T. Wang, 2016). Although these formal groups share similar characteristics as described in the Western context, there are distinct characteristics presented in Chinese context, which may influenced "by the Chinese educational systems (featured by top-down management with an emphasis on command and control) and socio-cultural factors (such as collectivism)" (Zhang & Pang, 2016, p. 11).

As much research on the topic of PLCs in China is published in leading Chinese publication journals; thus, the studies on how PLCs have been practiced in mainland

China have been inaccessible for researchers and practitioners outside of China. A recent literature review filled this gap. Qiao et al. (2018) examined empirical studies that were conducted on PLCs for kindergarten to Grade 12, between the years 2006 and 2015, in mainland China. From the initial 235 sources, the authors selected 44 empirical studies (30 in Chinese and 14 in English) to conduct in-depth analysis. The review revealed differences between the Chinese practices of PLCs and Western practices. In Chinese practices, teachers tended to identify and reproduce the “best” practices from their peers; in Western practices, they emphasized the diverse perspectives of teaching practices (Qiao et al., 2018).

Similarly, a mixed-method study conducted by Zhang and Pang (2016) also explored the characteristics of Chinese PLCs. They conducted questionnaires with 175 teachers and follow up interviews with 14 teachers at seven schools (five elementary schools and two secondary schools) in Shanghai China. The questionnaires were designed using Hord’s (1997) characteristics of PLCs. The interviews were conducted to explore the underlying reasons for the characteristics (shared vision and values, collective learning, shared personal practice, shared and supportive leadership, and supportive conditions) existed at interviewees’ schools. The researchers uncovered three factors that may explain the characteristics found in their study: (a) the school education system, (b) traditional social cultures, and (c) teacher recognition methods.

In addition to the studies on PLCs’ characteristics in China, numerous theorists (DuFour & Eaker, 1998; Hord, 2004; Teague & Anfara, 2012) have stressed the importance of principal leadership in creating the holding environment to nurture collaborative work (Blankenship & Ruona, 2007) in China. The principals are expected

to communicate the shared values and visions of PLCs to fellow teachers and provide physical and relational conditions to implement those shared values and visions with the teachers. For example, Ting Wang (2016) studied the role of school leadership in creating PLCs and highlighted the strong principal leadership in helping to sustain PLCs. The author conducted a qualitative study where she interviewed 20 participants (teachers and principals) from two high performing schools in China. Ting Wang (2016) asserted that the strong principal leadership “played a critical role in developing and communicating a shared vision, shaping a culture of trust, supporting and monitoring collegial learning” (p. 209).

### **School-Based Teaching and Research Activities (*jiaoyan huodong*) in China**

School-based in-service education has been a growing trend in the West, and it has undertaken some significant changes since the 1970s (Lai, 2010; Wong & Tsui, 2007). Lakerveld and Nentwig (1996) believed that when schools are under the pressure of curriculum reform, schools are responsible for determining both needs and strategies to meet those needs. Educators in Europe assert that school plays an important role in making the reform successful.

School-based learning also has a long history in China. Schools are considered the prime locations for teachers to develop their professional competencies to meet today’s challenges and uncertainties (Neuhaus, 2014; Wong & Tsui, 2007). This approach has been used to not only enhance teachers’ performance, but also to improve the quality of the profession (Wong & Tsui, 2007). According to Wong and Tsui (2007), “schools are expected to identify and organize individual staff development activities which are relevant to teachers’ practical needs and to support the professional growth of teachers in



the context of school reform” (p. 459). To evaluate teacher professional development before and after the curriculum reforms, they conducted a study in seven schools in Guangdong province regarding how their teachers perceive the effectiveness of school-based learning activities. They interviewed 69 participants from two elite grammar schools, one vocational school and one normal grammar school, to understand teachers’ experiences with school-based learning activities. Wong and Tsui (2007) identified both positive and negative views that will be further discussed in the subsection “Challenges of Running School-Based Learning Activities.”

As teacher preparation programs and in-service learning training are unlikely to prepare teachers to implement the curriculum reform, school-based teachers’ professional development was the recommended way to achieve this vision (Lai, 2010). In China, the types of school-based teacher professional development are organized by “teaching research group (TRG, *jiaoyanzu*)” (Paine & Ma, 1993, p. 677), and teachers collaborate through the TRGs through school-based teaching and research activities (*jiaoyan huodong*). Chinese government drew lessons of this type of structure from the Soviet Union in the 1950s, and since then, TRGs have been established in every school across China to provide opportunities for teachers to support each other’s teaching (Hu, 2011; Qian et al., 2017). Each school has several subject-based TRGs, including but not limited to Chinese, English, Mathematics, Chemistry, and Physics. The number of TRGs differs across schools based on the subjects offered at each school.

The “Secondary Education Provisional Regulation (Draft)” and “Primary Education Provisional Regulation” were issued in 1952, and the “Regulations of Teaching Research Groups in Secondary Education (Draft)” was issued in 1957; these

documents detailed the specific and clear provisions for TRGs. To improve overall educational quality, TRGs are used to organize teachers to conduct teaching and research work, summarize and exchange pedagogical experiences, and develop teachers' ideology and professional skills (Hu, 2011). The duties include: (a) learn about the guidelines, policies, and directions on secondary education; (b) discuss teaching guidelines, materials, and methods; (c) study theoretical and professional knowledge in combination with teaching; and (d) summarize and exchange teaching practices and guide activities.

**Heads of teaching research groups (*jiaoyan zuzhang*).** Teaching research groups (*jiaoyanzu*) are formal organization units in schools and are used to promote collaborative teacher learning (Qian et al., 2017; Wong & Tsui, 2007). Each TRG consists of three to seven teachers teaching the same subject matter. Each school assigns a head to the TRGs, who is usually considered as the “best or one of the best teachers in the group” (Paine & Ma, 1993, p. 678), to organizes weekly or biweekly school-based learning activities (Qian et al., 2017). Each school has its own selection criteria for the heads of TRGs. This selection is determined by the principal or the vice principal in the academic division. This position reports to the principal regularly. In other words, the TRGs are intermediaries between front-line teachers and the school principals. Principals authorize the heads of TRGs to design and deliver professional development activities according to their subject matters (Qian et al., 2017).

Yan Hu (2011, 2012, 2013), a professor from Beijing Normal University, has extensively researched the functions of TRGs and the roles of the heads of TRGs (*jiaoyan zuzhang*). Hu (2012) examined the nature of TRGs in secondary schools in the urban area of Beijing in China, surveying perceptions of roles of the heads of TRGs (*jiaoyan*

*zuzhang*) from 2000 teachers and 800 heads of TRGs (*jiaoyan zuzhang*). Several characteristics emerged from the findings. Most teachers and heads of TRGs believed that the heads of TRGs undertook the role of professional leader (*zhuanye lingdao*) and organization manager (*zuzhi guanlizhe*). Professional leader refers to the heads of TRGs leading the groups in teaching, teacher development, research projects, and teaching and research activities (*jiaoyan huodong*); whereas the organization manager communicates and implements commands from upper-level school administrators and manages teaching and research activities (*jiaoyan huodong*), teacher evaluation, promotion, quality control and other managerial related duties. Due to multiple roles of the heads of TRGs (*jiaoyan zuzhang*), it creates ambiguity in the nature of TRGs, which may jeopardize goals and quality of the activities (Hu, 2012).

**Types of school-based teaching and research activities (*jiaoyan huodong*) in China.** In China, teachers engage in a series of school-based teaching and research activities that allow them to obtain advanced knowledge about teaching and learning (Wong, 2015). These activities are divided into routine activities (collective lesson preparation meetings, lesson observation and post lesson conference, and homework and test analysis) and unconventional activities (research projects, workshops, curriculum development, debrief meetings). Hu's (2013) quantitative study surveyed 2000 teachers and 800 heads of TRGs (*jiaoyan zuzhang*) in a school district in Beijing about the current state of the functions of the TRGs. She discovered that the top three most helpful activities identified by the teachers are: (a) collective lesson preparation meetings, (b) lesson observation and post lesson conference, and (c) homework and test analysis. Wong

and Tsui (2007) categorize the teaching and research activities (*jiaoyan huodong*) into six types (see Table 1).

**Table 1**

*Types of Teaching and Research Activities (jiaoyan huodong)*

Type	Description
Mentorship	A new teacher is usually assigned a mentor. The mentor is tasked with offering support and advice to the novice teacher (Wong & Tsui, 2007).
Lesson observations and post lesson conferences	The head of the department is usually required to observe lessons that are taught by other teachers in the same department. A post lesson conference will be held in some cases to provide feedback for improvement (Wong & Tsui, 2007).
Collective lesson preparation meetings ( <i>beike zuohui</i> )	Collective lesson preparation meetings provide space for subject teachers who teach at the same grade level to meet and discuss teaching. Teachers usually meet once a week on a fixed schedule to obtain knowledge and skills (Wong & Tsui, 2007). In some schools, the purpose of this activity is to “unify teaching content and procedures” (Lai, 2010, p. 628).
Monthly/weekly learning activities	It is mandatory for teachers to attend the monthly/weekly learning activities where they learn about the “current political philosophy, new educational regulations and documents to teachers, introducing adolescent psychology and ways for teacher to build up their self-confidence” (Wong & Tsui, 2007, p. 460)
Open lesson ( <i>gongkaike</i> )	Organized by TRGs. It is a way for teachers to showcase and disseminate teaching practices and provide a space for discussion. The open lesson opens to different subject teachers as well.
Self-reflection reports	Each teacher is required to submit at least one self-reflection report each year. Teachers have the autonomy to decide on the topics. Sometimes school assigns topics to teachers and financial incentives are offered to teachers upon submission (Wong & Tsui, 2007).

**Lesson preparation group meeting (*beike zuohui*).** In Lai’s (2010) study at a normal secondary school with 12 participants, the school offers four major school-based learning activities, which include: (a) collective lesson preparation, (b) teacher-authored

reflection pieces, (c) lesson observations at other schools, and (d) research paper. Among these, the collective lesson preparation is the most popular and frequent type of school-based learning activities in China (Lai, 2010; Yuan & Zhang, 2016). Lai (2010) describes the purpose of this collective lesson preparation meeting as “for experienced teachers to teach younger teachers what part of the curriculum content to highlight and what the major difficulties in the process of teaching and learning were” (p. 623). She further highlights the purpose of this activity as “to unify teaching content and procedures” (p. 628).

One study by Guo (2017) examined the current state of LPGs under the perspective of PLCs. The study involved 263 participants from 12 schools in the Shanxi Province of China. Guo (2017) conducted questionnaires (263 participants) and follow up interviews (with 15 participants) to investigate teachers’ perspectives of the current situation in LPGs. The author concluded that there was a gap between LPGs and PLCs. In other words, the author believed that the LPGs in this study did not hold all the PLC characteristics described by Hord (1997). Guo (2017) identified a number of factors that caused this gap. First, the LPGs lacked shared values and shared vision. Teachers’ values and vision toward LPGs were limited to students’ performance (e.g., test scores). Second, although teachers acknowledged the importance of LPGs, the LPG activities were somewhat formalized. The LPG activities did not create shared collective knowledge among teachers. Third, although LPG group leaders were considered as the subject leader, it was difficult to achieve the competition for posts. Fourth, there was a lack of support mechanism in terms of evaluation and reward. Resources provided to LPGs were rather unplanned and blind.

More specifically, a considerable number of studies (Guo, 2017; Lai, 2010; Yuan & Zhang, 2016; Zhang, 2017; Zhou, 2014) have discussed the collaborative challenges in LPGs or TRGs. Zhou (2014) conducted a case study in a middle school in China for three purposes: first, examine the motivational factors within LPGs; second, discover the actual practices and results of LPG activities; and third, identify teachers' need of LPG activities and their vision toward LPG. The study discovered that collaboration in LPG lacked in-depth cooperation and proactiveness. This finding may have resulted because teachers' evaluation mechanism was highly determined by students' academic performance, which created strong competitiveness among teachers. Under such context, authentic collaboration among teachers was jeopardized and challenging to achieve.

In a study with teachers from a secondary school in Shanghai, Yuan, and Zhang (2016) described that the collaboration of the overall TRGs in this school; collaboration remained at the surface level for many years, and the school leaders had to amend the collective lesson preparation meetings. For example, before the amendment took place, teachers in the TRG just "shared their lesson plans with each other with no further discussion" (Yuan & Zhang, 2016, p. 819). As a result, the school leaders required the teachers to meet on a weekly basis to discuss the objectives, share lesson content, and teaching practices. Although there are many forms of school-based learning activities, teachers reported that their reflection and professional development came through individual learning rather than these fully designed professional development requirements.

### **Challenges in Developing and Sustaining PLCs in China**

As the characteristics and operations of PLCs are heavily rooted in Western perspectives, potential cultural conditions may become roadblocks when developing and sustaining PLCs in the Chinese context.

Dialogue is seen as “a form of deliberate talking and thinking” (Lee, 2004, p. 6). When teachers engage in dialogues that encourage reflection, it often involves examining one’s teaching practices or even challenging one’s assumptions and beliefs behind certain practices. In such situations, teachers may not feel comfortable considering the “face” issues in Chinese culture. Being “too honest” could rupture group harmony or even interpersonal relationships. For example, in creating shared visions, members need to express their honest feelings and ideas, including the ones that may cause awkward moments or be in opposition to veteran teachers. In Chinese cultures, people are expected to give more respect to seniors (Lee, 2004). When discussing the mutual visions, it is likely that the group members tend to listen, agree, and follow the elders or the superiors.

Engaging in reflective dialogues may trigger conflicts or confrontations in collaborative groups. Zhang and Wan (2016) conducted a study to discover the status quo of reflective practices among 23 Chinese student teachers in learning communities. The findings revealed that most student teachers engaged in surface-level reflection, and few of them critically reflected on their teaching practices. To maintain harmony and save/give face to others, “the conflicts that are considered as being crucial for facilitating teachers’ learning and reflection in LCs had not arisen among group members although they might have different opinions” (Zhang & Wan, 2016, p. 681). For these purposes,

teachers tend to give compliments and avoid disagreement with others in learning communities.

On a similar notion, authentic collaboration among teachers has been a roadblock for developing effective school-based learning activities (Gong, 2015; Wong & Tsui, 2007). According to Wong and Tsui (2007), collaboration is a factor in success for school-based learning activities. However, they found that some teachers do not offer their full participation in collective lesson preparation meetings and post-lesson conferences; such behaviors include “keeping good teaching methodologies to themselves and being unwilling to share with others and avoiding jeopardizing interpersonal rapport with other colleagues by not pinpointing others’ teaching problems” (Wong & Tsui, 2007, p. 465).

Besides cultural barriers, the appropriateness of the learning content of school-based learning activities has been questioned (Gong, 2015; Wong & Tsui, 2007). Teachers have claimed that there is a gap between learning content and teaching needs, arguing that teachers’ needs were not being assessed prior to the learning takes place. In addition, the learning activities are not “adjusted to various stage of the personal and professional growth cycle of teachers” (Wong & Tsui, 2007, p. 466). As a result, teachers are not motivated to collaborate with others, nor are they interested in achieving a deeper level of sharing. Rather, they see these learning activities as part of their duty (Wong & Tsui, 2007).

Teachers have reported that the structure of their collaborative learning and the ways the work occurred leads to conformity rather than to change (Paine & Ma, 1993). In a recent qualitative study that explores the experiences from seven Chinese teachers from



a primary school, Qiao and Yu (2016) claimed that the teachers are afraid to challenge the status quo, where they see “creativity and critical thinking were regarded as unnecessary and risky” (p. 112). They aim to identify best practices and clone it in their own classrooms (Qiao & Yu, 2016). By doing so, teachers neglect the fact that context varies in each classroom. What is considered the best practice in one’s classroom does not make it appropriate for all teachers or all learners. Thus, teachers may not be able to engage in authentic learning, reflection, and dialogue in such learning processes (Lai, 2010). Having teachers participate actively in dialogue about their teaching preferences, learners, and content would motivate teachers to engage in such activities in the long run (Qiao & Yu, 2016).

In general, schools face diverse challenges in implementing the ongoing curriculum reform policies via professional learning communities. Specifically, principals have higher expectations for teacher development and pedagogical improvement in TRGs (*jiaoyanzu*) and heads of TRGs (*jiaoyan zuzhang*; Qian et al., 2017).

## **Topic II. Reflective Practice in Teacher Learning**

### **Defining Reflective Practice**

The definition of reflective practice has evolved over time. The concept is an important component in teachers’ professional learning. Although this concept is not new, there is still no single and universal definition to define reflective practice (York-Barr et al., 2016). The researcher is drawing on literature from reflective practice in schools and reflective practice in workplace learning. Many definitions are concerned

with improving schools through reflective practice (Merriam et al., 2007). Schon (1987) promoted the concept of reflective practice, which Merriam et al. (2007) described, “allow one to make judgments in complex and murky situation—judgments based on experience and prior knowledge” (p. 172). Schon (1987) believed that critical reflection is crucial to reflective practice. Marsick and Watkins (1992) called reflective practice “continuous learning for continuous improvement” (p. 9). York-Barr et al. (2001) defined reflective practice as:

a deliberate pause to assume an open perspective, to allow for higher-level thinking processes. Practitioners use these processes for examining beliefs, goals, and practices, to gain new or deeper understandings that lead to actions that improve learning for students. Actions many involve changes in behaviors, skills, attitudes, or perspectives within an individual, partner, small group, or school. (p. 6)

This definition highlights the importance of engaging in reflection and critical reflection in teacher learning. Among many scholars who have studied reflective practice, Donald Schon (1983, 1987) is a well-known theorist who wrote about reflective practice in ways that drew attention to its nature and value for improving practice. He believed that reflective practice is a way to reduce the gap between formal theory and actual practice. Schon (1983) saw two types of cognitive behaviors embedded in the reflective practice process: reflection-in-action and reflection-on-action. Reflection-in-action is a process where individuals reflect on their actions while doing them; reflection-on-action provides the opportunity to look back on the action after it has happened to “discover how reflection-in-action may have contributed to an unexpected outcome” (Finlayson, 2015, p. 725).

**Reflection and critical reflection.** Although there are a variety of school-based learning and research activities (*jiaoyan huodong*), each activity involves learning

through experience. According to Dewey (1938), to make learning happen through experience, the “experience” itself must contain two elements: (a) *continuity*, and (b) *interaction*. Merriam et al. (2007) described the *continuity* as “learners must connect what they have learned from current experiences to those in the past and see possible future implications” (p. 162). An *interaction* takes place between the individual and their environment. These two elements intertwine and provide the foundation for learning through experience (Merriam et al., 2007). When teachers learn through experience while participating in the school-based learning and research activities (*jiaoyan huodong*), they are expected to discuss their experiences and what they would do differently in the future (continuity) and to work collaboratively with each other to promote learning (interaction).

When learning through experience, the researcher believes that the teachers should engage in reflection and/or critical reflection when participating in the school-based learning and research activities (*jiaoyan huodong*). The concept of reflection can be found in Dewey’s (1933) work “How We Think ,” where he defines reflection as “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends” (p. 9). It “involves the assessment of the assumptions implicit in beliefs, including beliefs about how to solve problems” (Mezirow, 1990, p. 12). When one starts by “challenging the validity of presupposition in prior learning” (Mezirow, 1990, p. 12), this process is called premise reflection, also called *critical reflection*. Critical reflection is concerned with why we do what we do, rather than what we do or how we do in solving problems (Mezirow, 1990). It is critical for teachers to examine the assumptions of their behaviors inside and outside the classrooms. Teacher education programs should

support teachers in cultivating the capacities to be reflective practitioners (Yost et al., 2000).

As reflective practitioners, teachers should be able to reflect while teaching (*reflection in action*) and think through a situation afterwards (*reflection on action*). Yost et al. (2000) believed that the critical reflection should be embedded in teacher education programs that intertwine reflection throughout the teacher education curriculum. They describe critical reflection as follows:

Critical reflection involves thinking and problem solving. Problem solving is a process in which capable individuals attempt to make sense of a challenging situation, identify areas of practice needing scrutiny, define goals for improvement, and pursue actions to accomplish them. Reflective practitioners use this process to modify and enhance their understanding of professional practice. (p. 40)

The researcher finds it useful to think about critical reflection as involving the three types that are categorized by Mezirow (1991): (a) content reflection, (b) process reflection, and (c) premise reflection. Content reflection examines the content of a situation in problem-solving. It answers the questions of “what is happening here,” “what the problem is,” and “what I am feeling.” Process reflection questions the problem itself and encourages one to consider the ways of dealing with the problem. It answers the questions of “how I ended up feeling this way.” Premise reflection (mostly referred to as “critical reflection”) questions the belief system of the problem. It answers the question of “why it is important to me” and helps the questioner to see the issue and the world in a different way (Cranton, 2016).

So, what is the essential difference between reflection and critical reflection? Brookfield (2017) provided a clear-cut explanation between the two and Fook et al. (2006) summarize the differences as “reflection is important in the daily business of

living, but that critical reflection (with the express purpose of understanding how assumptions about power construct—and often restrict—practice) is vital if we are to make crucially relevant changes in the ways we work” (p. 13). Fook (2007) supported this argument by stating that “to be able to reflect critically; obviously one must be able to reflect. However, not all reflective practice will lead to critical reflection—that is, to fundamental changes” (p. 442). In the context of school-based learning activities, teachers may need to practice simple reflection before engaging in critical reflection, as the process of critical reflection requires individuals to become more self-aware of their beliefs, assumptions, and behaviors, and to be motivated to change behaviors. Researchers have used the terms critical reflection and reflective practice interchangeably; however, Fook (2007) considered critical reflection to be a subset of reflective practice.

**Reflection in workplace learning.** As the researcher studies participants’ level of reflection in workplace learning, it is necessary to review Fenwick’s (2000) perspectives on reflection. Among Fenwick’s five perspectives, the situative perspective and constructivist perspective are relevant to this study, as the researcher studied a situated learning phenomenon using constructivist learning methods. When teachers participate in different types of school-based teaching and research activities (*jiaoyan huodong*), successful learning is a collaborative process that consists of reflection, dialogue, and collaboration among teachers in school settings.

When reflection is viewed from the constructivist perspective, it is a conscious and explicit process that helps learners to make meaning of their experiences (Lundgren et al., 2017). The aim is to “foster critical reflection on experience and challenge learners’

assumptions while validating personally constructed knowledge” (Merriam et al., 2007, p. 169). The facilitators in such settings encourage learners to reflect on their experiences. The process encourages the practitioners to focus on “reflection on experience” (Fenwick, 2003, p. 22). With the concrete experience, practitioners reflect on the experience and construct new knowledge. In the constructivist perspective, reflection leads to meaning-making or perspective transformation (Lundgren et al., 2017).

When reflection is viewed from the situative perspective, learners are involved in a community of practice (Fenwick, 2003) that emphasizes participation and collaboration, with systems and tools to trigger reflection in the workplace (Lundin & Nulden, 2007, as cited in Lundgren et al., 2017). In the situative perspective, reflection does not need to be intentionally organized; rather it highlights the importance of system tools, people and other organizational factors that could trigger reflection (Lundgren et al., 2017). In TRGs, teachers are expected to reflect through participating in various school-based teaching and research activities (*jiaoyan huodong*).

**Kember et al.’s reflection questionnaire.** Although many researchers and practitioners have argued for the importance of developing reflective practitioners through professional courses, very few methods are available to measure “whether and to what extent the learners engage in reflective thinking” (Kember et al., 2000, p. 382). Kember et al. (2000) developed a questionnaire that measures the level of reflective thinking in professional courses. They identified the need for such a questionnaire from their action research projects “to synthesize conclusions about curriculum design for promoting reflective thinking” (p. 382) from five courses. Initially, they assessed students’ level of reflective thinking through journal writing; however, the limitation of

this approach was that the level of reflective thinking could only be assessed in courses that required journal writing. This approach could not measure students' development in the level of reflective thinking. Thus, they developed this tool to "measure the effects of the teaching and learning environment on reflective thinking" (Kember et al., 2000, p. 393). Kember et al. (2000) developed the questionnaire based on Mezirow's work on transformative learning theory, in which Mezirow posits that reflective thinking is the essential component in the process of transformative learning.

Kember et al.'s (2000) project resulted in the development of the Reflection Questionnaire (RQ), a 16-item survey with 5-point Likert scales that yields a total score for the level of reflective thinking. There are four scales in the questionnaire: (1) *Habitual Action (HA)* happens when one automatically takes action without thinking too much, (2) *Understanding (U)* happens when one uses existing knowledge without relating to personal or practical situations, (3) *Reflection (R)* happens when one uses past experience to develop new understandings, and (4) *Critical Reflection (CR)* happens when one encounters change in perspective through reflection. Each scale consists of four contributing items. Definitely agree is scored as 5, agree with reservation is scored as 4, neutral is scored as 3, disagree with reservation is scored as 2, and definitely disagree is scored as 1. Thus, for each scale, the scores could range from 4 to 20 (Kember et al., 2000).

In 2012, the Mayo Clinic adapted the RQ to measure faculty reflection on medical grand rounds (Kember et al., 2000). They used the RQ on a weekly basis for a duration of 6 months in 2011. They adapted the original questionnaire developed by Kember et al. (2000) from 16 items to 8 items using a 5-point Likert scale. Each level of reflection

included two questions. For this study, they collected a total of 1134 responses. The study revealed correlations between participants' clinical experiences and their reflection on learning materials presented at medical grand rounds, the presenters' past teaching experience, and the delivery style in the presentations. The findings provided several practical suggestions to improve future courses that meet the goal of "changing physician behaviors and improving patient care" (Wittich et al., 2013, p. 283). The use of this RQ in this study could help the researcher to gain a better understanding of the level of reflection occur during the school-based teaching and research activities (*jiaoyan huodong*).

### **Reflective Practice in Schools**

Teachers are more likely to engage in reflective practice if the learning activities are situated in a school context (Camburn, 2010). Camburn (2010) conducted a longitudinal study of 80 public schools that implemented a comprehensive school reform program. The study aimed to examine whether embedded learning opportunities are more supportive of reflective practice for teachers than traditional professional development programs. The study confirmed that teachers are more likely to engage in reflective practice if they are situated in the workplace with peers and instructional experts. It also supports the importance of reflection to help practitioners make meaning of their experiences and plan their course of action. These findings further suggest that teachers need to internalize and make sense of the expectation of curriculum reform or policy change before they can make any changes in their teaching practices (Camburn, 2010).

In a qualitative study at a primary school in Shanghai, Qian et al. (2017) reported on a qualitative study at a primary school in Shanghai where they examined how school



leadership responded to curriculum reform by enhancing teacher learning in schools. The school redesigned the organization structure and carried out three strategies: (a) “adopt a connective approach to reorganize school teaching and research activities” (Qian et al., 2017, p. 109) that emphasize learning transfer; (b) create opportunities for teachers to reflect on their practices; and (c) “modify teacher assessment policies to highlight the importance of continuous learning and reflection” (Qian et al., 2017, p. 110). These innovative strategies address the need of continued reflection in this profession and provide further support for the argument that teachers should become reflective practitioners. The teachers who participated in this study acknowledged that these strategies made a positive impact in their teaching and teacher learning.

### **Topic III. Facilitation of Teacher Learning**

#### **Defining Facilitation**

The concept of *facilitation* has evolved in the field of management, education, and community development since later in the 20th century (Hogan, 2005). The use of facilitation encourages diverse perspectives by engaging in dialogues to explore assumptions and opinions among members. The person who guides this process is the *facilitator*. In the book “The Complete Facilitator’s Handbook,” Heron (1999) defines *facilitator* as “a person who has the role of empowering participants to learn in an experiential group.” (p. 2). Teacher learning is supported when the facilitator is considered as the more knowledgeable person among the group and leads the group to have collaborative dialogue on focused guiding questions or issues (Coburn & Rusell, 2008).

Facilitators hold responsibilities for designing the structures and processes for the collaborative conversations (Andrews-Larson et al., 2017). The role of facilitators has three themes: (a) “planning of activities” (Andrews-Larson et al., 2017, p. 7), (b) “establishing the purpose and goals of the activities” (Andrews-Larson et al., 2017, p.7) and (c) “mediating teacher conversations” (Andrews-Larson et al., 2017, p. 7). In a 4-year study that examine the role of focus and facilitation on instructional improvement through teachers’ collaborative conversations from 30 schools in four large urban school districts, the authors pointed out the role of facilitators in “guiding the construction of group norms, eliciting multiple points of view, and pressing teachers to explain their contributions to the discussion and connect them back to implications for classroom instructions” (Andrews-Larson et al., 2017, p. 7). Their findings revealed that the structured conversations created by the facilitators provided opportunities for teachers to engage meaningful conversations collectively.

### **Facilitating Small Teams**

**Use of collegial inquiry.** Drago-Severson (2009) defined collegial inquiry as “a shared dialogue that involves reflecting on one’s assumptions, values, commitments, and convictions with others as part of the learning process.” (p. 26). Collegial inquiry promotes meaningful dialogues among peers about their teaching process, and it could be practiced in different forms, such as written reflection, group dialogue, etc. The researcher focused on how teachers engaged reflection in small teams when they discussed teaching practices. Collegial inquiry is “a kind of reflective practice” that guides teachers to become more aware of their assumptions behind their decisions and behaviors in the classroom (Drago-Severson, 2009, p. 154). Principals from Drago-Severson’s research

asserted the collegial inquiry process helped to encourage and model open conversations where the teachers expressed honest feelings and opinions.

**Use of protocols.** Garmston (2007) defined protocols as “establish[ing] environments for learning by providing prescriptions for conversations” (p. 58). The protocols provide psychological safety for difficult conversations, as these conversations are usually well-structured when protocols are used. The protocols could guide groups to converse in open-ended questions or identify solutions to specific problems (Allen & Blythe, 2004). In Andrews-Larson et al.’s (2017) study, they discovered the benefits of using well-designed protocols to undertake activities in more productive ways for learning, especially in the events of lesson planning. The protocols enabled teachers to engage in structured discussions on key aspects in the lesson. Facilitator presented the questioning skills when using protocols. Despite the benefits, they also discovered limitations. Protocols did not aid facilitators in guiding teachers to “elaborate on, justify, or problematize the ideas they brought forward” (p. 32).

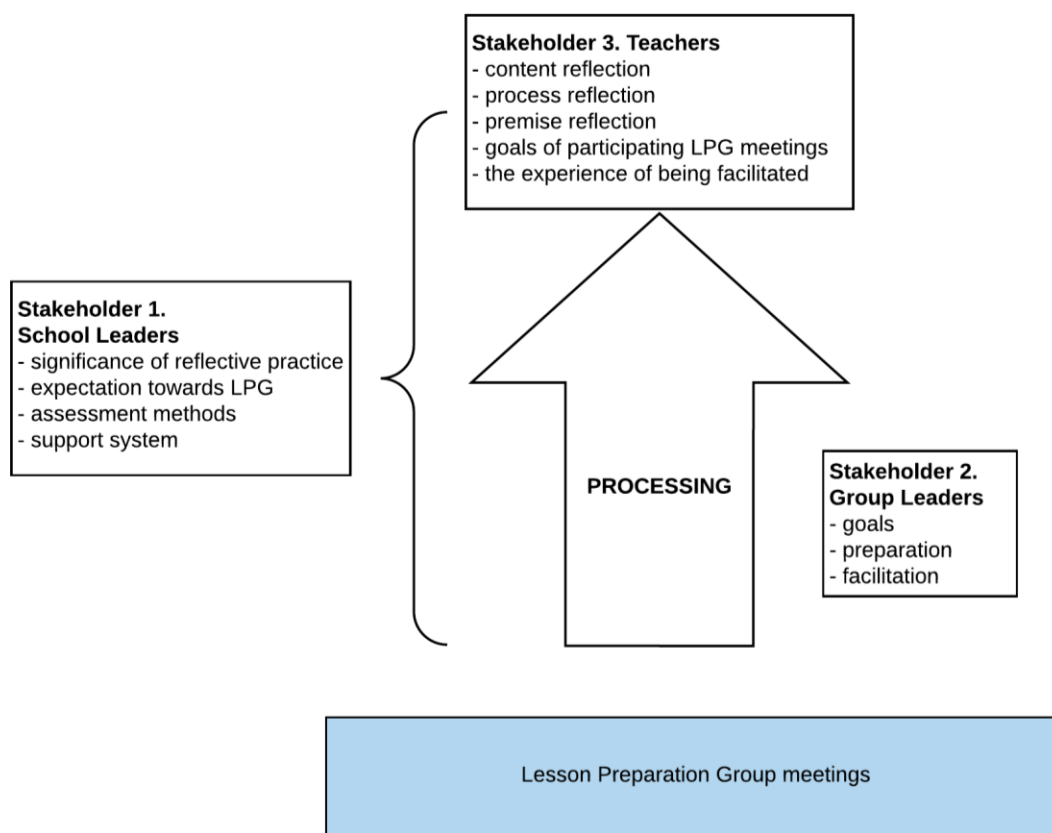
### **Conceptual Framework**

The researcher believed that the conceptual framework for this study captured the process of learning from experience. This process involved three stakeholders: (a) *LPG group leaders*, (b) *teachers*, and (c) the *school leaders*. The LPG meeting was the *event*. It is assumed that the *LPG group leaders* engaged teachers in dialogue that processed teachers’ teaching experience and led teachers to reflect.

The framework drew on the quote “adults do not learn from experience; they learn from processing experience” (Arin-Krupp, as cited in Garmston & Wellman, 1997,

p. 1) and York-Barr et al. (2016) in conceptualizing “learning is a function of reflection” (p. 28). Each category of the conceptual framework was directly derived from the research questions. The overarching research question explored the three stakeholders’ perceptions and practices of reflective practice in LPG meetings.

The first research question sought to discover how the first stakeholder (LPG group leaders) prepared and facilitated LPG meetings with teachers. Thus, the logical conceptual category to capture responses to this question was “Goals, Preparation, and Facilitation.” The second research question sought to identify how the second stakeholder (teachers) experienced LPG meetings, especially focusing on the actions of the LPG group leaders in facilitating reflective practice. Hence, the appropriate category to capture the responses to this question was “Reflection,” which could be further divided into content reflection, process reflection, and premise reflection. The third research question explored the third stakeholders’ (the school leaders) values and evaluates the reflective practice of these activities. Accordingly, the “Goals Toward Teacher Professional Development and Evaluation Methods” were appropriate categories.

**Figure 2***Conceptual Framework*

### Chapter III

#### METHODOLOGY

This exploratory qualitative case study sought to inform the practice of lesson preparation groups (LPGs, *beikezu*) to improve facilitating reflective practice through LPG meetings (*beike zuhui*) in Chinese public high schools. The purpose of this study was to discover how a sample of LPG group leaders (*beike zuzhang*) facilitated the LPG meetings and to shed light on the current state of reflective practice in a sample of LPG meetings.

The overarching research question was: What are the perceptions of reflective practice for LPG meetings among the school leaders, LPG group leaders and teachers?

The other research questions that guided this study were:

1. How, if at all, do school leaders value and evaluate reflective practice in LPG meetings?
2. How do LPG group leaders prepare and facilitate LPG meetings with teachers?
3. How do teachers experience the actions of LPG group leaders in facilitating reflective practice in their LPG meetings? Do they report reflecting critically on their work as a result of their reflective practice in LPG meetings and, if so, what helped them to do so?

This chapter describes the research methodology, including research design, research sample, data collection methods, ethical considerations, and methodology limitations.

### **Rationale for Qualitative Research Design**

The researcher chose a qualitative research design for this study to understand the current state of reflective practice in the LPG meetings that were facilitated by their respective LPG group leaders in two Chinese public high schools. This study was grounded in the *social constructivist* orientation that is categorized in the interpretivist philosophical framework (Creswell, 2013, 2017). It is also complemented by the situated orientation that is the basis for Communities of Practice (Lave & Wenger, 1991) that has guided many schools in adapting this format for their PLCs (Blankenship & Ruona, 2007). The purpose of this approach was to understand participants' situations through open-ended questions and to interpret the meaning of what the participants stated about their situations (Creswell, 2013, 2017; Merriam & Tisdell, 2016).

The researcher believed that qualitative research design was an appropriate approach to conduct this study for three reasons. First, the researcher was interested in understanding a phenomenon from participants' perspectives (Creswell, 2013; Merriam & Tisdell, 2016). In this study, the researcher made an effort to understand how the LPG group leaders made sense of their roles and the processes they used to facilitate learning with teachers in LPG meetings. Second, the researcher was the primary instrument for gathering and analyzing data (Creswell, 2013; Merriam & Tisdell, 2016). The researcher collected and analyzed verbal and nonverbal communication through observations and

interviews, which allowed the researcher to “process information (data) immediately, clarify and summarize material, check with respondents for the accuracy of interpretation, and explore unusual or unanticipated responses” (Merriam & Tisdell, 2016, p. 16). Last, the one-on-one interviews provided in-depth and rich descriptions of participants’ experiences and perceptions. The combination of quotes from interviews and the field notes from observations helped to achieve the descriptive nature of this qualitative research (Merriam & Tisdell, 2016).

### **Rationale for Case Study Methodology**

The definition of case study methodology has evolved over time; most recently, Robert K. Yin (2014) defined the case study methodology with two parts. The first part concerns the scope of a case study, which is “an empirical inquiry that investigates a contemporary phenomenon (the ‘case’) in-depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident” (R. K. Yin, 2014, p. 16). The second part depicts the feature of a case study, where this empirical inquiry

copes with the technically distinctive situation in which there will be many more variables of interest than data points, relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and benefits from the prior development of theoretical propositions to guide data collection and analysis. (R. K. Yin, 2014, p. 17)

With an understanding of this twofold definition, the researcher believed a case study methodology was an appropriate approach to conduct this study. The researcher used multiple sources of evidence to understand how the LPG group leaders facilitated reflective practice through LPG meetings. By collecting various forms of qualitative data, the researcher strived to achieve the hallmark of a qualitative case study, which is to



provide “in-depth understanding” (Creswell, 2013, p. 98) of the cases. In this study, the researcher studied the LPG group leaders, their respective teachers, and school leaders.

### **Overview of Research Sample**

This study consisted of a qualitative case study design of a sample of 11 LPG group leaders and their respective teachers, along with school leaders. All participants were living and working in the Guangdong province of mainland China when they participated in the study. The study had a total of 11 groups. Specifically, the researcher explored the current state of reflective practice between the LPG group leaders and their respective teachers.

The participant LPG group leaders met the following criteria:

1. worked at a public high school in the Guangdong province of mainland China;
2. taught subject matter courses on a regular basis; and
3. facilitated LPG meetings.

The participant teachers met the following criteria:

1. worked at a public high school in the Guangdong province of mainland China;
2. taught subject matter courses on a regular basis; and
3. participated in the LPG meetings that were facilitated by the LPG group leaders of this study.

The participant school leader(s) met the following criteria:

1. worked in the same public high school as the LPG group leaders.

The researcher used a purposeful sampling strategy to find participants who met the criteria. The researcher had access to the sample as a result of her past professional

relationships with professionals at public high schools in the Guangdong province of China. Participants were selected with the following steps: (a) the researcher met with the principals/vice principals from public high schools in her network to explain the study; (b) the principals/vice principals connected the researcher with a gatekeeper to coordinate logistics, request referrals for participants who meet the above criteria; (c) the gatekeepers referred participants of LPG group leaders who met the above criteria; (d) the researcher further verified the list of participants; and (e) the gatekeepers connected participants with the researcher via WeChat (a Chinese multipurpose messaging software).

After the researcher connected with participants, the researcher made an appointment with each of them, respectively, to present a bilingual Informed Consent Form in person. The bilingual Informed Consent Form (see Appendices A, B, & C) was signed on site. Meanwhile, the researcher explained the next steps and answered questions; subsequently, the researcher finalized the date and time to observe the LPG meetings with respective LPG group leaders.

### **Overview of Information Needed**

#### **Contextual Information**

The researcher collected the following contextual data: (a) the history of the school sites; (b) basic statistics of the school sites; (c) sample teachers' reflections; and (d) template of LPG meeting notes. Besides, the researcher was unable to collect the following contextual data in written forms: (a) the organizational structure of the school; (b) the job description of LPG group leaders; and (c) the selection and evaluation criteria

of LPG group leaders. The purpose of collecting these data was to better understand the participants and context.

Lewin (1935, as cited in Bloomberg & Volpe, 2008) believes that “human behavior is a function of the interaction of the person and the environment” (p. 70). In other words, the environment influences how people behave. According to Lewin, if the environment changes, then people must change their behaviors. The contextual data would be used to determine how the LPG group leaders were expected to facilitate the LPG meetings in each school context.

### **Demographic Information**

The researcher asked all interviewed participants to fill out a demographic inventory. Three inventories were designed separately for three different populations: (a) school leaders, (b) LPG group leaders, and (c) teachers. These data have assisted the researcher in the data analysis process to make sense of similarities and differences among participants’ perceptions (Bloomberg & Volpe, 2008).

The demographic inventory for school leaders (see Appendix D) included: (a) age, (b) gender, (c) position title, (d) teaching subject (if any), (e) highest degree level, (f) institution of the highest degree level, (g) years of teaching experience, (h) years of serving as a school leader in this school, and (i) years of serving as a school leader in other schools (if any).

The demographic inventory for the LPG group leaders (see Appendix E) included: (a) age, (b) gender, (c) teaching subject, (d) highest degree level, (e) institution of the highest degree level, (f) years of teaching experience, (g) length of time served as

the leader, (h) relevant training (if any), and (i) other school duties and administrative position in the school.

The demographic inventory for teachers (see Appendix F) included: (a) age, (b) gender, (c) teaching subject, (d) highest degree level, (e) institution of the highest degree level, (f) years of teaching experience, (g) length of time served as a member in this group, and (h) other school duties and administrative position in the school.

### **Perceptual Information**

The researcher collected perceptual data through formal and semi-structured interviews, the Group Learning Survey (GLS), and the Reflection Questionnaire (RQ). By using these methods, the participants shared their perceptions and experiences. All methods helped the researcher to understand the perceptions of each population better.

For the LPG group leaders, the perceptual data helped the researcher to understand: (a) the ways that the LPG group leaders designed and facilitated the LPG meetings, (b) the demonstration of reflective practice in these meetings, and (c) the extent to which LPGs operated as learning groups.

For teachers, the perceptual data helped the researcher to understand: (a) the ways that LPG group leaders designed and facilitated the LPG meetings, (b) the extent to which reflection or critical reflection occurred as a result of their reflective practice in LPGs, and (c) what helped teachers to reflect or reflect critically in LPG.

For school leaders, the perceptual data helped the researcher to understand whether and how school leaders valued and evaluated reflective practice in LPG meetings.

Table 2 summarizes the collected data and the associated methods for collecting demographic, contextual, and perceptual data.

### Theoretical Information

The researcher conducted an ongoing literature review to determine what was already known about the study of (a) teacher learning in PLCs, (b) reflective practice in teacher learning; and (c) facilitation of teacher learning.

**Table 2**

#### *Information Collection*

Information	Review Documents	Demographic Inventory	Researcher Observations	Interviews	GLS	RQ
Contextual						
• School History	X					
• Statistics	X					
• Sample teachers' reflections	X					
• Template of LPG meeting notes	X					
Demographic						
• Age		X				
• Gender		X				
• Teaching subject		X				
• Highest degree level and institution		X				
<i>LPG Group Leaders</i>						
• Years of teaching experiences		X				
• Length of time served as the leader		X				
• Relevant training (if any)		X				
• Other school duties and administrative position in the school		X				
<i>Teachers</i>						
• Years of teaching experiences		X				
• Length of time serving as a member in this group		X				
• Other school duties and administrative position in the school		X				
<i>School Leaders</i>						
• Years of serving as a school leader in this school		X				
• Years of serving as a school leader in other schools (if any)		X				
Perceptual						
<i>LPG Group Leaders</i>						
• What were the ways that the LPG group leaders designed and facilitated the LPG meetings?			X	X	X	
• How was reflective practice demonstrated in meetings?			X	X		
• How did the LPG operate as a learning group?			X	X	X	
<i>Teachers</i>						
• What were the ways that the LPG group leaders design and facilitate the activities?			X	X	X	

Information	Review Documents	Demographic Inventory	Researcher Observations	Interviews	GLS	RQ
<ul style="list-style-type: none"> <li>Whether and how did reflection or critical reflection occur?</li> <li>In what ways did the LPG help teachers to reflect or reflect critically?</li> </ul>			X	X X		X X
<i>School Leaders</i> <ul style="list-style-type: none"> <li>What were school leaders' expectations of LPGs?</li> <li>How did the school leaders communicate these expectations?</li> <li>Whether and how did school leaders evaluate reflective practice?</li> <li>How did school leaders model and support LPG and reflective practice?</li> </ul>				X X X X		

### Overview of the Research Steps

Following is an overview of the research steps the researcher undertook to carry out this study and the sequence:

1. The researcher decided upon the sample and selection criteria of participants.
2. The researcher designed three interview protocols for three different populations (LPG group leaders, teachers, and school leaders) and translated the interview protocols from English to Mandarin.
3. The researcher designed and translated an observation form to assist in capturing data while conducting the observations on site.
4. The researcher adopted the GLS and the RQ.
5. The researcher translated the GLS (see Appendix G) and the RQ (see Appendix H) from English to Mandarin.
6. The researcher piloted the interview protocols, the GLS, and the RQ with three participants to test the feasibility and ensured accurate meaning was captured during translation.

7. The researcher amended instruments as necessary given feedback from the pilot test.
8. The researcher obtained approval from the Institutional Review Board (IRB) to ensure the study strictly followed the regulations for human subjects research.
9. The researcher met with the school leaders and introduced the study.
10. The researcher confirmed two school sites to conduct the study.
11. The school leaders from both school sites connected a gatekeeper with the researcher to further arrange observations and interviews.
12. The gatekeeper identified LPG group leaders who met the selection criteria and introduced them to the researcher via WeChat.
13. At both school sites, the researcher met with each group leader in person. A bilingual consent form was presented and signed by the participants.
14. At both school sites, the researcher negotiated a date and time to observe the LPG meetings with the LPG group leaders.
15. The researcher conducted 10 observations of the LPG meetings that were facilitated by the LPG group leaders in the study.
16. The researcher interviewed the LPG group leaders and at least one respective teacher from each group. Among 34 interviews, 33 interviews were done in person; one interview was done via text. The researcher also asked these participants to complete the demographic inventory, the GLS, and the RQ.
17. The researcher interviewed at least two school leaders from each school site.

18. Among a total of 34 interviews, 32 interviews (94.1%) were recorded and transcribed verbatim.
19. Among a total of 34 interviews, 23 interviews (67.6%) were translated from Mandarin into English based on the data's significance (relevancy to the research questions) and richness (amount of details): (a) seven out of 11 (63.6%) interviews of LPG group leaders, (b) 11 out of eighteen (61.1%) interviews of respective teachers, and (c) five out of five (100%) interviews of school leaders.
20. The researcher used Microsoft Excel for document management.
21. Data collected from interviews, researcher observations, and the inventories were analyzed individually and both within and across cases.

The researcher conducted the study at two school sites. At each school, the researcher conducted observations using the observation protocol (see Appendix I) to take note of the activities and interactions at the LPG meetings as a reference for the researcher during the one-on-one interviews. The researcher asked the LPG group leaders and their respective teachers who were observed to fill out the GLS and the RQ. The GLS, developed by Dechant and Marsick (1993), helps teams to discover how team members learn as a group. The RQ was used to understand further the participants' engagement in reflective thinking as a result of the LPG meetings. At school #1, the researcher had the opportunity to present the similarities and discrepancies among the inventories' responses during a staff meeting.

Table 3 shows an overview of the participants who completed the Demographic Inventory, the GLS, and the RQ.



**Table 3***Participants Completed the Inventories*

	<b>School #1</b>	<b>School #2</b>
<b>Demographic Inventory</b>	<ul style="list-style-type: none"> <li>• 8 LPG group leaders</li> <li>• 3 school leaders</li> <li>• 18 respective teachers who were being observed</li> </ul>	<ul style="list-style-type: none"> <li>• 3 LPG group leaders</li> <li>• 2 school leaders</li> <li>• 20 respective teachers who were being observed</li> </ul>
<b>GLS</b>	<ul style="list-style-type: none"> <li>• 8 LPG group leaders</li> <li>• 15 respective teachers who were being observed</li> </ul>	<ul style="list-style-type: none"> <li>• 2 LPG group leaders</li> <li>• 16 respective teachers who were being observed</li> </ul>
<b>RQ</b>	<ul style="list-style-type: none"> <li>• 7 LPG group leaders</li> <li>• 17 respective teachers who were being observed</li> </ul>	<ul style="list-style-type: none"> <li>• 3 LPG group leaders</li> <li>• 16 respective teachers who were being observed</li> </ul>

Table 4 is a subset of Table 3 and shows the number of participants who were interviewed by the researcher among the case study participants.

**Table 4***Interviewed Participants*

		LPG Group Leaders	Teachers	School Leaders
Interviews	School #1	Group Leader 1	2 teachers	3 school leaders
		Group Leader 2	1 teacher	
		Group Leader 3	1 teacher	
		Group Leader 4	2 teachers	
		Group Leader 5	2 teachers	
		Group Leader 6	2 teachers	
		Group Leader 7	1 teacher	
		Group Leader 8	2 teachers	
	School #2	Group Leader 9	2 teachers	2 school leaders
		Group Leader 10	2 teachers	
		Group Leader 11	1 teacher	
TOTAL		11 LPG group leaders	18 teachers	5 school leaders

**Methods of Data Collection**

The researcher reviewed selected literature prior to the collection of data. The literature review process informed the research design, but it was not considered as part

of the data collection. The review of literatures was ongoing throughout this study. Multiple methods of data gathering were used to achieve triangulation to create an in-depth understanding of each case through various perspectives (Creswell, 2013). The researcher applied three methods in this study: (a) interviews, (b) observations, and (c) inventories.

## **Interviews**

The primary method of this study was formal, semi-structured, one-on-one interviews of 11 LPG group leaders, 18 respective teachers, and five school leaders. Most interviews were conducted in a face-to-face format. Among a total of 34 interviews, the researcher conducted 33 interviews (97.1%) with participants who were available to meet face-to-face while she was in China, and one interview (2.9%) via WeChat texting format while she was in the United States.

The researcher designed three interview protocols for three different populations: (a) one for the LPG group leaders (see Appendix J), who were the primary sample of this study; and (b) the other two for the teachers (see Appendix K) and school leaders (see Appendix L), who were the other stakeholders for this study. Semi-structured interviews provided the flexibility to “ask a series of regularly structured questions, permit comparisons across interviews, and to pursue areas spontaneously initiated by the interviewee” (Berg & Lune, 2012, p. 114). The interviews were comprised of open-ended questions, where participants were asked to describe specific experiences. The researcher used probes to elaborate on responses and helped the participants to stay on topic. The interview protocols were designed based on the research questions of this study:

Overarching Research Question: What are the perceptions of reflective practice for LPG meetings among the school leaders, LPG group leaders and teachers?

1. How, if at all, do school leaders value and evaluate reflective practice in LPG meetings?
2. How do LPG group leaders prepare and facilitate LPG meetings with teachers?
3. How do teachers experience the actions of LPG group leaders in facilitating reflective practice in their LPG meetings? Do they report reflecting critically on their work as a result of their reflective practice in LPG meetings and, if so, what helped them to do so?

During the data collection process, the school leaders' interview protocol was modified once; the LPG group leaders' and teachers' interview protocol were each modified twice. Table 5 shows the mapping of each interview question to the related research questions.

## **Observations**

The researcher conducted observations to gain a deeper understanding of the contexts in which the participants worked, and the interactions between the LPG group leaders and their respective teachers. The researcher gathered field notes by conducting observations as a researcher observer (Creswell, 2013). The researcher created the field notes template (observation protocol) by adapting the Cornell note-taking system (Pauk & Owens, 2013). The Cornell note-taking system allowed the researcher to take notes in a systematic format. The field notes consisted of three sections: (a) Record (observable data), (b) Reflect (reflections, insights, and themes), and (c) Questions (questions need to

**Table 5***Mapping of Research Questions and Interview Questions*

<b>Population</b>	<b>Research Questions</b>	<b>Interview Questions</b>
<b>School Leaders</b>	How, if at all, do school leaders value and evaluate reflective practice in LPG meetings?	What do you understand are the purposes and goals of LPG meetings?
		What do you expect the LPG group leaders do in the LPG meetings?
		How do you communicate the expectation(s)?
		How do you assign these leaders? What are the selection criteria?
		Do the leaders of teacher learning groups receive training before starting their role? If so, what type of training?
		Reflection:
		a. How do you define reflection? What are the behaviors, actions, and attitudes signal that reflection is happening?
		b. How do you know whether the teachers are reflecting?
		c. How important it is to you that LPG group leaders support reflection teachers? How do you communicate this important?
		d. (optional) what do you hope to change as a result of reflection?
		What do you do to promote the importance of the LPG group leaders?
		What do you think the importance or value of the LPG meetings?
		How do you support the LPG group leaders in their work?
<b>LPG Group Leaders</b>	How do LPG group leaders prepare and facilitate LPG meetings with teachers?	What evaluation in place to determine the quantity and quality of reflection occurs in these groups?
		Is there anyone else you recommend me to interview on this perspective?
		What are your responsibilities as a group leader? What tasks do you need to complete?
		What are your goals for being a group leader?
		What steps do you take to prepare for the LPG meetings? Could you please provide several examples?
		Provide examples of what happens when you meet together.
		<i>Probes:</i>
		• What steps do you take when you have a discussion?
		• What topics do you discuss?
		• What type of questions do you ask?
		• What happens with those ideas?
		• Is there anything you wish you could have done differently when holding a discussion?
		• What are the things you wish to talk about during the meetings?
		• How would you want to talk about it?
		• What are the things you wish you don't talk about?
		Describe the first time your group met and how it's different now.
		<i>Probes:</i>
		• What factors made the difference?
		Describe a situation in which your group worked together to solve a teaching challenge.
		<i>Probes:</i>
		• What was the challenge?
		• What did you say in the group?
		• How did the group members respond?
		• How did the challenge get resolved? With what outcomes?

Population	Research Questions	Interview Questions
		<ul style="list-style-type: none"> <li>Is there anything you wish you (or others) would have done differently?</li> </ul> <hr/> <p>As you think of your experiences since you started this role, can you describe the best experience?</p> <p><i>Probes:</i></p> <ul style="list-style-type: none"> <li>When did this occur?</li> <li>Where did this occur?</li> <li>What factors made it the best experience?</li> <li>Did you learn anything about your role from this experience? If yes, what did you learn?</li> </ul> <hr/> <p>As you think of your experiences since you started this role, can you describe a turning point experience?</p> <p><i>Probes:</i></p> <ul style="list-style-type: none"> <li>When did this occur?</li> <li>Where did this occur?</li> <li>What factors made it a turning point experience?</li> <li>Is there anything you wish you would have done differently?</li> </ul> <hr/> <p>What advice would you give to someone stepping into the role of being a group leader based on your own experience?</p>
Teachers	How do teachers experience the actions of LPG group leaders in facilitating reflective practice in their LPG meetings? Do they report reflecting critically on their work as a result of their reflective practice in LPG meetings, and if so, what helped them to do so?	<p>What do you understand are the purposes and goals of the meeting?</p> <p><i>Probes:</i></p> <ul style="list-style-type: none"> <li>Do you have any goals that differ from what the school promotes? If so, what are they?</li> </ul> <hr/> <p>How well do you think your group is achieving these goals?</p> <hr/> <p>What does the group leader do when the group encounters a teaching difficulty?</p> <hr/> <p>What usually happens when you meet together?</p> <p><i>Probes:</i></p> <ul style="list-style-type: none"> <li>What steps do you take when you have a discussion?</li> <li>What topics do you discuss?</li> <li>What type of questions do you ask?</li> <li>What happens with those ideas?</li> <li>Is there anything you wish you could have done differently when holding a discussion?</li> <li>What are the things you wish to talk about during the meetings?</li> <li>How would you want to talk about it?</li> <li>What are the things you wish you don't talk about?</li> </ul> <hr/> <p>In general: when does reflection happen in your teaching practice?</p> <hr/> <p>In meetings: do you reflect on past teaching events during the meetings? When and how do you engage in reflection? How often?</p> <hr/> <p>Describe a situation in which your group worked together to solve a teaching challenge.</p> <p><i>Probes:</i></p> <ul style="list-style-type: none"> <li>What was the challenge?</li> <li>What did you say in the group?</li> <li>How did the group members respond?</li> <li>How did the challenge get resolved? With what outcomes?</li> <li>Is there anything you wish you (or others) would have done differently?</li> </ul> <hr/> <p>Describe the best experience.</p> <p><i>Probes:</i></p> <ul style="list-style-type: none"> <li>When did this occur?</li> </ul>

Population	Research Questions	Interview Questions
		<ul style="list-style-type: none"> <li>• Where did this occur?</li> <li>• What factors made it the best experience?</li> </ul>

be further explored or clarified). These observations notes were finalized immediately after each observation. Using a combination of observations and interviews assisted the researcher in using her knowledge and expertise in the field to interpret what happened in the situations, rather than relying solely on the interviews (Merriam & Tisdell, 2016). The researcher observed each LPG meeting for a class period (40 minutes), considering the tremendous energy and concentration needed in conducting observations. The researcher observed a total of 10 LPG meetings and 2 other school-based teaching and research activities (approximately 480 minutes in total) and took field notes for each LPG meeting she observed.

## Questionnaires

The researcher used two questionnaires for this study: (a) GLS, and (b) the RQ. Dechant and Marsick (1993) developed the Team Learning Survey (referred as Group Learning Study in this study) to find out the effectiveness of the group as a learning group. The original TLS contains 60 questions that assess both team learning conditions and organizational learning conditions. As the study only explored the team level of the LPG and not the organizational level, the researcher extracted the questions that measured Team Learning Outcomes, Team Learning Processes, and Team Learning Conditions only. The adapted inventory contained 39 questions. The researcher translated the GLS survey from English to Mandarin, and she piloted the translated survey with three teachers who taught in Chinese public secondary schools. Further revisions of the

questions were made based on the feedback received from the pilot. The researcher asked the participants who were being observed to complete the inventory.

RQ was adapted from Kember et al. (2000)'s work to assess the level of reflection of teachers who participated in the LPG meetings. The questionnaire consisted of 16 questions that measured four levels of reflection: (a) habitual action, (b) understanding, (c) reflection, and (d) critical reflection. The researcher translated the questionnaire from English to Mandarin, and she piloted the translated questionnaire with three teachers who taught in Chinese public secondary schools. Further revisions of the questions were made based on the feedback received from the pilot. The researcher asked the participants who were being observed to complete the questionnaire.

### **Data Analysis and Synthesis**

The researcher analyzed the qualitative data in three phases: (a) document preparation, (b) data analysis, and (c) interpretation and synthesis. The researcher examined the data from individual cases, across case units, and against demographic data.

#### **Document Preparation**

**Interview data.** As the interviews were conducted in Mandarin Chinese, upon completion of each interview, the researcher sent the recordings to a professional transcription service company. Upon receiving the transcripts, the researcher listened to each recording to ensure the accuracy of transcriptions. Among 34 interviews, based on the data's significance (relevancy to the research questions) and richness (amount of details), the researcher selected 23 transcripts (67.6%) and translated them from

Mandarin Chinese to English. For this study, the researcher coded and analyzed all 34 interviews.

**Observation data.** The researcher typed out the participant observation notes that contained observable data and reflective data as well as remaining questions from a researcher participant role.

**Demographic data.** The researcher tabulated the demographic data of all 34 participants in a Microsoft Excel spreadsheet.

**Inventory data.** The researcher tabulated the data of the GLS and the RQ in an Excel spreadsheet. She later used the data from both inventories to achieve triangulation that allowed her to examine data from different sources of data.

**Documents.** The researcher gathered the following documents: (a) school brochure, (b) LPG meeting minutes template and sample, (c) open lesson evaluation template, and (d) teaching reflections. These items were coded in the following categories: (a) case profiles, (b) meeting content, (c) open lesson, and (d) reflection.

### **Analytical Process**

**First step.** During the first cycle of coding, the researcher aimed to capture the “storyline” of the data; she developed the initial coding scheme for the three different populations (LPG group leaders, teachers, and school leaders) in response to the research questions and the conceptual framework in this study. She developed these codes in English and then translated them to Mandarin Chinese. These codes were used for holistic coding in the first-cycle coding.

**Second step.** After reading through and coding the first two transcripts, the researcher modified the initial coding scheme. While listening to the audio recordings of



other transcripts, the researcher continued to modify the coding scheme for the purpose of best representing the participants' responses. As the researcher read through the data, she created and filled out a participant summary form where she logged salient questions and issues to consider.

**Third step.** Upon achieving the holistic coding process, the researcher moved to the second cycle coding where she identified “in-vivo codes” (Saldana, 2016). The researcher used the Microsoft Excel spreadsheet to create a master code list that aided the researcher to keep track of the holistic codes and in-vivo codes and apply those codes to the transcripts. Once the second cycle coding was complete, the researcher printed all the transcripts and scrutinized them to discover patterns, themes, and categories. The researcher once again modified and categorized the codes corresponding to the research questions. The final version of the coding scheme is in Appendix M.

**Fourth step.** The researcher used the Microsoft Excel spreadsheet to create data summary tables with frequencies of codes across participants. These data summary tables enabled the researcher to identify major findings of the study by examining data across individuals and groups.

**Fifth step.** The researcher created data displays to make sense out of major findings and cross-group findings and offered an opportunity to see “findings in new ways” (Bloomberg & Volpe, 2008, p. 137). These data displays included flowchart (e.g. Figure 3) and tables (e.g. Table 9, Table 16, Table 17, Table 18, Table 19, Table 20, Table 21, and Table 22).

**Sixth step.** The researcher made a consistency chart with categories, major findings, cross-case findings, interpretations, conclusions, and relevant theories.

### **Ethical Considerations**

The researcher gained the approval of this study from the Institutional Review Board (IRB) to ensure the “human subjects are either physically or emotionally injured by researchers” (Berg & Lune, 2012, p. 70). The researcher made efforts to address confidentiality and anonymity issues. Participants signed a bilingual Informed Consent Form before participating in the study, and their identifying information was removed from the transcripts and the field notes. All electronic files were kept in a password-protected folder in the researcher’s computer, and paper files were stored in a locked cabinet in the researcher’s home office. The researcher changed each participant’s name to a code that contains letters and numbers when reporting data findings.

### **Validity and Reliability in Qualitative Research**

Four criteria have been used as a framework for examining the quality of qualitative research design: (a) construct validity, (b) internal validity, (c) external validity, and (d) reliability (R. K. Yin, 2014). The researcher outlined the different strategies she used to check for the accuracy and credibility of the research findings (Creswell, 2014).

#### **Construct Validity**

Construct validity refers to “identifying correct operational measures for the concepts being studied” (R. K. Yin, 2014, p. 46). In this study, the researcher defined all the terms used in this study by referencing published studies. The researcher used two strategies to increase construct validity: (a) use multiple sources of evidence, and (b)

establish a chain of evidence (R. K. Yin, 2014). Three research methods were used to achieve the purpose of triangulation that allows the researcher to examine evidence from different sources of data (Creswell, 2014). For example, as an observer participant, the researcher took detailed field notes to provide a rich and thick description of the settings. In addition, a chain of evidence was established by linking the research questions to the interview protocol with a clear indication of under what circumstances the evidence has been collected (R. K. Yin, 2014).

### **Internal Validity**

Internal validity deals with the problem of making inferences in case study research (R. K. Yin, 2014). In this study, the researcher considered alternative explanations to respond to the findings in the data analytic phase.

### **External Validity**

External validity refers to whether the research findings can be generalized beyond this study, regardless of the research methods used (R. K. Yin, 2014). For case study research, the researcher makes analytic generalization rather than statistical generalization (R. K. Yin, 2014). Due to the limited scope of this study, the researcher suggests conducting further research to examine the findings discovered in this study.

### **Reliability**

Reliability is achieved if another researcher uses the same procedures and conducts the exact same case study again, and they arrive at the same findings and conclusions (R. K. Yin, 2014). The reliability of this study was increased because readers

and researchers could view documents that were involved in the study, such as the interview protocol, the observation protocol, a case study database, etc. In addition, the researcher employed two former teachers from China to code six interviews to ensure inter-rater reliability.

### **Limitations**

No matter how carefully a study was designed, limitations exist; some limitations might be related to the qualitative research methodology, and some limitations might be unique to the design of the study (Bloomberg & Volpe, 2012). In this study, the researcher took the maximum efforts to control the limitations.

The first limitation relates to participant reactivity. The primary data collection of this study was interviews. In this case, the participants might have provided responses that were socially desirable, or they perceived what the interviewer wanted to hear (Bloomberg & Volpe, 2012). The researcher addressed this issue by explaining the research purpose, how findings would be used, and how their responses would be kept strictly confidential.

A second limitation relates to the purposive sampling strategy. In this study, the researcher used a small and restricted sample size. The objective of purposive sampling was to obtain a rich and thick description of sample cases to gain an in-depth understanding of a phenomenon (Bloomberg & Volpe, 2012). This strategy set the limit in generalizing the findings to others (Berg & Lune, 2012). The researcher addressed this issue by presenting a detailed demographic and contextual background of the

participants, which would help the reader to determine the application of the findings in other settings (Creswell, 2013).

A third limitation is with the demographics of the participant's sample. The researcher attempted to cover a demographically diverse sample of participants without jeopardizing the researcher's intent of the qualitative study, which was to describe a particular phenomenon in-depth in a mix of people and contextual factors (Bloomberg & Volpe, 2012). She recruited participants who met the sample criteria through the connections from public secondary schools in the Guangdong province of mainland China.

### **Researcher Bias**

As previously mentioned, the researcher was a practitioner who has been designing and delivering professional development workshops for K-12 educators in China. This continuous involvement created a potential for bias in gathering and interpreting the data. In addition, the researcher had side conversations with participants outside of semi-structured interviews. As a result, the researcher collected various data sources using different research methods to reduce bias as much as possible. Furthermore, the researcher handled the bias by mindfully remaining aware of her beliefs and tracking her changes of perspectives through writing a research journal.

### **Chapter Summary**

This chapter provided an overview and explanation of the research methodology of this study. The purpose of this exploratory qualitative case study was to shed light on

how LPG group leaders facilitated LPG meetings and what reflective practice looked like in these meetings. The sections included were: (a) Overview of Research Sample, (b) Overview of Information Needed, (c) Overview of Research Steps, (d) Methods of Data Collection, (e) Data Analysis and Synthesis, (f) Ethical Considerations, (g) Validity and Reliability, (h) Limitation, and (i) Researcher Bias.

## Chapter IV

### FINDINGS

This exploratory qualitative case study sought to inform the practice of lesson preparation groups (LPGs, *beikezu*) to improve facilitating reflective practice through LPG meetings (*beike zuhui*) in Chinese public high schools. The purpose of this study was to discover how a sample of LPG group leaders (*beike zuzhang*) facilitated the LPG meetings and to shed light on the current state of reflective practice in a sample of LPG meetings.

The overarching research question was: What are the perceptions of reflective practice for LPG meetings among the school leaders, LPG group leaders and teachers?

The other research questions that guided this study were:

1. How, if at all, do school leaders value and evaluate reflective practice in LPG meetings?
2. How do LPG group leaders prepare and facilitate LPG meetings with teachers?
3. How do teachers experience the actions of LPG group leaders in facilitating reflective practice in their LPG meetings? Do they report reflecting critically on their work as a result of their reflective practice in LPG meetings and, if so, what helped them to do so?

This chapter includes a description of the LPG meetings context in both schools, followed by the main findings and analysis of the study. To help the reader understand the context of the study, the researcher provides school profiles by presenting their demographic information, principals' background and perspectives, how the groups were formed, and the selection of LPG group leaders. The subsequent section includes the study's main findings. The researcher provides representative data to support these findings by using direct quotes from the qualitative interviews.

### **Description of the Context**

This section includes information about the LPG meetings in both schools, the principals' backgrounds and perspectives, how LPGs were formed, the selection of LPG group leaders, and schools' expectations for the LPGs at each school.

LPGs are formed to serve the purpose of a collective lesson study where teachers are encouraged to share pedagogical experiences. LPG meetings are a traditional school-based activity where teachers from the same grade level get together to prepare lessons collectively (Xu, 2015). Groups were formed based on grade levels and subjects. For example, teachers who teach mathematics at grade 10 meet to discuss and prepare lessons together. At both schools, LPGs met weekly to discuss teaching per school's provision. In addition to the weekly meetings, teachers also informally discussed teaching challenges and shared resources outside the meetings.

In this study, both schools were public high schools in the Guangdong Province in mainland China. School #1 was a district-managed public high school, whereas School #2 was a municipality-managed public high school. As the researcher was unable to



locate an official definition and distinction about districted-managed public high schools and municipal-managed public high schools from relevant Chinese government websites, the researcher reached out to the Deputy Director of the Shenzhen Education Bureau personally and obtained information in this regard. The deputy director described the difference between districted-managed school and municipal-managed school is on school funding and personnel management. The district finances fund the district-managed schools, and the district education bureau manages the district-managed schools' teachers. The municipal finances fund the municipal-managed schools, and the municipal education bureau manages municipal-managed schools.

The researcher conducted 34 in-depth interviews and 12 on-site observations in total. At School #1, eight groups were chosen by the Director of Teachers Professional Development department based on the selection criteria outlined in Chapter 3. At School #2, three groups were chosen by the Deputy Director of the Academic Affairs Office using the same selection criteria.

## **School Profiles**

### **School #1**

School #1 was a districted-managed public school, located in the city center. The school offers both day school and boarding school from grade 10 to grade 12, with over 200 teachers and administrative staff and 2600 students. The principal has been serving the role at this school for over 3 years. After assuming the role, the principal initiated a school-based teaching and research activity called "A Weekly Research" (每周一研), which required the LPG to hold meetings weekly. The principal piloted this initiative

across all subjects in grade 12 for a year before enforcing the initiative across all grade levels.

The researcher interviewed three school leaders from School #1 in this study.

Table 6 provides the school leaders' demographic information in this study from School #1.

**Table 6**

*Demographic Information of School Leaders from School #1*

Code	Age	Gender	Position Title	Teaching Subject	Highest Degree	Years of Teaching Experience	Years of Serving as a Leader in School #1
SL1.S1	>50	M	Principal	Chinese	Bachelors	30 years	2.5 years
SL2.S1	40-44	F	Grade Director	Biology	Masters	19 years	Did not provide
SL3.S1	40-44	M	Grade Director	Biology	Masters	20 years	Did not provide

**Group formation.** The groups were formed by respective teaching subjects at the same grade level. Teachers did not have the autonomy to choose which group to join.

**Selection of LPG group leaders.** Each grade director (*nianji zuzhang*) proposes the initial selection of LPG group leaders, respectively. And then the grade director (*nianji zuzhang*) would consider which candidates could possibly lead the team to achieve the school goals. The principal described the LPG group leaders usually are the ones who are “capable, hard-working, able to create group cohesiveness, and a pioneer in the academics” (“既要有能力，又要勤奋，又要要有凝聚力，要学术引领力的这样”). The principal further highlighted the challenges of selecting LPG group leaders. When they assign an administrative role(s) to teachers, they need first to assign the headteacher (*banzhuren*) for each class, then assign the LPG group leaders for the LPGs. They

avoided giving dual administrative roles to individuals, unless the teacher were willing to do so. Depending on each school's average age, the school leaders avoided assigning the group leader role to elderly teachers, to provide more growth opportunities for younger teachers.

## **School #2**

School #2 was a municipal-managed public school, located in a suburb. Unlike School #1, School #2 was a full boarding school that offered grade 10 to grade 12, with over 300 teachers and administrative staff and over 2700 students. The researcher interviewed the vice principal at School #2, as the principal was not available. The vice principal has been serving the role at this school for over 5 years. He stated that the school requires each LPG holds a group meeting every week. Each meeting should last for 80 minutes (2 class periods).

The researcher interviewed two school leaders from School #2 in this study. Table 7 provides the school leaders' demographic information in this study from School #2.

**Group formation.** Similar to School #1, the groups in School #2 were formed by respective teaching subjects at the same grade level. Teachers did not have the autonomy to choose which group to join.

**Selection of LPG group leaders.** The vice principal described three selection criteria for selecting the LPG group leaders: (a) the individual's willingness to serve others, (b) the individual's performance is above average, and (c) the individual's potential to be an exemplary role in the group. According to the vice principal, teachers

**Table 7***Demographic Information of School Leaders in School #2*

Code	Age	Gender	Position Title	Teaching Subject	Highest Degree	Years of Teaching Experience	Years of Serving as a Leader in School #1
SL4.S2	>50	M	Vice Principal	English	Masters	<i>Did not provide</i>	<i>Did not provide</i>
SL5.S2	40-44	M	Deputy Director of Office of Academic Affairs	<i>Did not provide</i>	<i>Did not provide</i>	<i>Did not provide</i>	<i>Did not provide</i>

fill out a questionnaire toward the end of the semester, where they indicate their

willingness to serve as a group leader role.

The Office of Academic Affairs is responsible for assigning the LPG group leaders. The Office of Academic Affairs drafts a list of candidates and then holds general meetings with other school leaders to finalize the list. Considering one teacher may hold several administrative positions simultaneously, for example, he or she might serve the role of a headteacher (*banzhuren*), a group leader of LPG, and a subject leader (*xueke zuzhang*) in one semester; thus, the school leaders might coordinate across departments to balance out the workload. When there is a conflict of determining whether a teacher is more appropriate to serve the headteacher (*banzhuren*) or the group leader, the school usually gives priority to the headteacher (*banzhuren*) positions. Eventually, the school publicizes the final list. If an individual teacher opposes to the assignment, the school coordinates internally to identify an alternative assignment. Table 8 provides an overview of the demographic information of both schools.

**Table 8***An Overview of Demographic Information of School #1 and School #2*

School #1	School #2
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School Type	Managed by the district; A mixed of day school and boarding school	Managed by the municipality; Boarding school only
Grade Level	Grade 10-12	Grade 10-12
School Location	City center	Suburb
Number of students	Over 2600	Over 2700
Number of teachers and administrative staff	Over 200	Over 300
Number of Teaching Class	54	60

### Group Profiles

This study involved a total of 54 participants. In addition to the 49 participants from the 11 groups, there were five school leaders participated in the Study. Among the 49 participants, 29 participants (11 LPG group leaders and 18 teachers) were both interviewed and observed, and 20 participants (all teachers) were only observed. There was a total of 11 groups involved in the study: (a) eight groups from School #1, and (b) three groups from School #2.

The following are summaries of the participants of 49 LPG group leaders and teachers. See Appendix N for a detailed overview of the LPG group leaders' participants and teachers' participants in the study, including participants who were both interviewed and observed, and participants who were only observed.

- **Group Size:** Group size ranged from three to 19 members. The average group size in this study was eight members.
- **Grade Level:** Among the 11 groups, five groups were from the 10th grade, one group was from the 11th grade, and five groups were from the 12th grade.

- Subject: Among the 11 groups, four groups taught English subject; two groups taught Chinese subject; two groups taught Chemistry subject; two groups taught Biology subject; and one group taught Geography.
- Gender: Out of 49 participants, 47 provided gender information: 38 participants were female, and nine participants were male. Two participants did not disclose this information in the demographic questionnaire.
- Age: Out of 49 participants, 46 provided the age information; the average age was 42 years old (11 participants were between the age of 35-39; 10 participants were above 50 years old; nine participants were between the age of 25-29; eight participants were between the age of 30-34; three participants were between the age of 40-44; three participants were between the age of 45-49; and two participants were between the age of 20-24). Three participants did not disclose this information in the demographic questionnaire.
- Years of Teaching: Out of 49 participants, 42 provided the years of teaching information; the range was between 1.5 months to 35 years and the average was 16 years. Seven participants did not disclose this information in the demographic questionnaire.

### **LPG Group Leaders' Profiles**

The following are summaries of the 11 LPG group leaders' demographic information.

- Gender: LPG group leaders were overwhelmingly (72.7%) female. Among the 11 LPG group leaders, eight out of 11 (72.7%) LPG group leaders were female.
- Years of Teaching: The average years of teaching among all 11 LPG group leaders was 18 years.
- Age: The average age of the group leader was 41 years old. Table 9 presents the age distribution of LPG group leaders and teachers in the study. LPG Group leaders (36.4%) were between the age of 35 to 39, two LPG group leaders (18.1%) were between the age of 30 to 34, two LPG group leaders (18.1%) were between the age of 40 to 44, two LPG group leaders (18.1%) were above the age of 50, and one LPG group leader (9%) ranged in age between 45 to 49.

**Table 9**

*Age Distribution of Study Participants Among All Groups*

	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11
	.S1	.S1	.S1	.S1	.S1	.S1	.S1	.S1	.S2	.S2	.S2
<24					1				1		
25-29									6	3	
30-34					1				4	2*	1*
35-39	3*	1*		2*		1				2	
40-44			1*			1*		2*			
45-49	1		1			1		1	1*		
>50	2	1	1	1	1*	2	2*				

\* indicate the group leader of that group falls into that age group.

### Findings From Interviews

The findings reported in this section are organized by each of the three research questions. The researcher reports nine findings that cover the similarities and differences

of findings from both schools. The first section shows how school leaders perceive the significance and assessment of reflection and reflective practice. The second section shows how the LPG group leaders prepared and facilitated the LPG meetings. The third section show how teachers experience reflection and reflective practice through LPG meetings.

### Significance and Assessment of Reflection and Reflective Practice from School Leaders' Perspectives

Table 10 displays the findings for the first research category that discover the significance and assessment of reflection from school leaders' perspectives.

**Table 10**

#### *Findings for Research Category #1*

Research Category	Similarities Across Both Schools	Differences Across Both Schools
#1. Significance and assessment of reflection and reflective practice	<p><b>Finding #1. Goals of LPGs:</b> There were multiple goals cited by the school leaders, but one common goal cited by all school leaders was planning and unifying teaching progress and content. Other goals included share teaching strategies, differentiating teaching instructions, and determining students' homework.</p> <p><b>Finding #2. Expected reflection moments:</b> School leaders expected teachers to engage in reflection through three means. These included reflection during weekly LPG meetings, reflection during open lesson debrief sessions, and individual written reflection in the teaching plan booklet.</p>	<p><b>Finding #3. Training for LPG group leaders:</b> Training varied in terms of opportunities and resources provided to the school. School #1 did not provide any formal training to LPG group leaders, whereas School #2 offered training primarily related to the new college entrance exam in China (<i>xingao kao</i>). Neither school trained teachers in the skills needed to manage and facilitate LPG meetings.</p> <p><b>Finding #4. Assessment methods of reflection:</b> School #1 did not have any assessment methods toward reflection. Although several assessment methods toward reflection existed in School #2, those methods only assessed individual level reflection (e.g., individual semester reflection report).</p>



**Finding #1. Goals of LPG.** All school leaders (100%) from School #1 reported that planning and unifying teaching progress was one of the purposes for the LPGs. Through the unification, the fellow teachers would have a better understanding of what should be taught and when should be taught. Although this was a widely acknowledged purpose, the principal from School #1 claimed this purpose was rather “traditional”:

From the traditional perspective, we emphasize collective lesson planning as the core of the LPG. They work out a semester’s teaching plan collectively and then balance the teaching progress. They also analyze teaching quality, students’ learning progress, textbooks, and so on. All of these are very traditional. (SL1.S1) 从传统的意思讲，备课组的活动就是我们更多的强调集体备课，共同制定一个学期的教学计划，然后平衡教学进度，进行教学质量的分析，学情分析，教材分析等等这些，这是很传统了...

He further shared what he believed is currently missing in the LPG meetings.

In the past, the teaching and research activities of our LPG were often superficial - superficial communication within the group in terms of coordinating and unifying the teaching progress. We hope [the teachers] would engage in teaching and research activities in-depth, which could be collective learning of the curriculum standards and then developing models of classroom teaching; these could become collective wisdom. (SL1.S1) 就说以前我们的备课组教研活动往往是浅表性的，教研浅表性教研，它只是协调进度，统一计划，大家来做这些表面上的一些沟通。深层次的教研活动，我们就希望深度教研或者深层调研的，它就是对基于对课程标准的共同学习，然后共同对教学课堂教学共同建模，然后集合大家的这种集体的智慧。

Commenting on the purpose of the LPGs, the grade director of Grade 10 from School #1 said that the unification of teaching progress was not the essential task:

Of course, they (the teachers) know what they are going to teach next week; so they can quickly determine the key and difficult points to teach during the following week according to the course standards, the examination syllabus, the students’ learning progress, the textbooks, and their own teaching experience. They can then decide on which teaching methods to use, these are what they can do. . . . It seems that coordination of teaching progress is not very important for us, not a very important thing, because there is not much difference in the progress of all teachers in the same grade—a little but not much at all, so spending a maximum of 3 to 5 minutes on it should be sufficient. In fact, the critical question is back on teaching research itself—which content is more

complicated than the others? What kind of methods should be used to solve it? (SL3.S1) 实际上他自然知道我们下周是要学什么内容，所以然后他根据课标，根据考纲，然后根据自己的学习，根据教材以及根据他自己的教学经验可以就很容易确定接下来这一周它里面的内容中的重点难点，然后采用什么样的方法，这就是他可以做到的...协调教学进度在我们这里好像不是一个很重要的事情，不是一个很重要的，因为协调教学进度，其实因为同一个年级所有老师的进度基本上没有太多区别，有一点（但）也不会很大，所以最多三五分钟就说完了。其实关键问题还是回到我们教学研究的本身上面的，这一周内容到底哪一个内容是比较难搞的？大家用什么样的方法去解决？

The principal and the grade director both stressed the important element of teaching and research in the LPG meetings, besides coordinating and unifying the teaching progress.

**Finding #2. Expected reflection moments.** The researcher asked school leaders several questions to find out when and how well they believed the teachers have engaged in reflection and their perceptions on LPG group leaders' roles in fostering reflection in LPG meetings. School leaders from both schools reported that they expected teachers to engage in reflection through three means: reflection during the LPG meetings, written reflection in the teaching plan booklet, and reflection during the open lesson debrief sessions.

**Reflection during LPG meetings.** School leaders asserted LPG group leaders played a vital role in facilitating teachers' reflection in LPG meetings. The Deputy Director of the Academic Affairs Office in School #2 highlighted that a healthy group discussion atmosphere provides the opportunity to cultivate teachers' habits of reflection:

The LPG group leaders and subject leaders play a key role in guiding every teacher in their reflection on teaching, because a good atmosphere for group discussion is beneficial in cultivating this habit. However, the frequency of reflection might be different for each teacher. The atmosphere formed by the LPGs, the Subject Groups, and even the entire school could increase the frequency of reflection. Moreover, it enables young teachers, especially those

who have recently graduated, to develop the habit of reflection on each lesson. (SL5.S2) 备课组长或者学科组长在引导教师们进行教学反思上比较关键。因为一个好的组内研讨氛围是可以很好地培养教师这种习惯。每一个老师都会进行教学反思，都会对自己的教学进行思考和改进，只是频率可能不同。但是备课组、科组乃至学校形成的氛围可以提高反思的频率，甚至能让一些年轻老师尤其是应届毕业的老师养成这种每节课都反思的习惯。

He further explained the function of the Academic Affairs Office in terms of cultivating and supporting reflection in the LPGs:

What can be done at the Academic Affairs Office is first to conduct check-ins on the LPG meetings to ensure each group is conducting regular meetings and discussions. Second, we will conduct aperiodic checks on teaching plan booklets from time to time, to ensure that teachers record their reflections in their lesson plans. Third, we urge each grade to conduct open lessons and seminars in different disciplines to create a positive atmosphere. Fourth, we hold regular meetings for the LPG group leaders and the Subject Group Leaders to emphasize the principles and requirements. Fifth, we hold special teaching forums for the LPG group leaders to summarize their teaching practices and teaching methods. (SL5.S2) 教务处能做的，一是学校层面对备课组活动会进行检查（不是抽查），确保各备课组定时定点进行研讨；二是不定期对教案进行抽查，确保教师教案后面附有反思；三是督促各年级组内进行不同学科的公开课、研讨课，确保大氛围的积极；四是对学科组长和备课组长进行定期会议，强调要求；五是召开教学专题论坛，让备课组长总结本组的实际做法，凝练出本备课组的教学方法。

On the other hand, the grade director of Grade 10 in School #1 expressed the current challenges of engaging reflection in LPG meetings. The LPG group leaders had very little power to influence other teachers:

The sense of powerlessness is particularly strong. Because it is challenging for the LPG group leaders to promote (reflection), the top-down communication approach often relies on individual personality, their authority in the group, or their advancement in the academics, or their teaching results which are a bit better than the others.' This way, they (LPG group leaders) may have a certain influence on other teachers, but in fact, these are not highly executable. They (teachers) can listen or not listen. Thus, the influence of the LPG group leaders on the teachers is weak. As a result, many ideas proposed by the LPG group leaders are not actually implemented. (SL3.S1) 无力感特别强。因为备课组长很难推动，他很多时候上传下达很多时候也是靠他的一种人格魅力，靠一种个人的在备课组里面的一种权威也好，或者学术上的一种比较前一点，

或者是说他的教学成绩比较优秀一点。通过这种方式，可能对其他的老师有一定的影响力，但是实际上说出来，反过来再想，因为这些东西都是没有太多的执行力，执行力都不是很强，因为人家可听可不听。所以备课组长对老师的那种影响力实际上是很小的。所以有的时候备课组长说的好多事情实际上落实不下来。

***Written reflection in the teaching plan booklet.*** In the teaching plan booklet, there was a designated place for teachers to record their reflective thoughts after each lesson. The principal from School #1 emphasized the importance of the written form of reflection in the teaching plan booklet, “especially for novice teachers, they need to have not only an education lesson plan in place for every lesson, but also a written reflection of the teaching process. There should be a record of it, but I have not reviewed them in these years” (我们现在教师的教案里面强调，那个是每一节课，尤其是年轻老师，每一节课有教育备课，然后执教过程最后要反思的，要有一个反思的记录，但是我这些年也没有去检查). The Academic Affairs Office reviews the teaching plan booklet, noted by the grade director of Grade 12 from School #1.

Commenting on the use of teaching plan booklet, the vice principal from School #2 claimed that there were two ways to assess whether a teacher engaged in reflection:

The first thing is to see his lesson preparation. We talk about “one lesson, three preparations.” A lesson plan before class is one version, a clean version; teachers usually write with a black pen. Through three rounds of preparation or after class, there should be comments and notes, in red, or in post-it notes; these are changes in the teaching plan booklet. Secondly, there is a teaching reflection section designed in the booklet. Even if you only write one reflection from your class, such as the introduction could be more interesting to stimulate students’ interests better and be more vivid, or tackling teaching difficulties, as well as testing; what have I not done enough; the interaction between the teachers and the students. We review the teaching plan booklet at mid-term and the end of the semester. (SL1.S2) 第一就看他的备课，我们不是讲一课三备，说你上课前这个教案是一个版本，干干净净的，比如说一般老师用黑笔写，如果是经过三轮备课之后，或者上完之后，再他就会有批注有珠笔有红笔，他就加上去，甚至有张贴，这是备课本上的变化嘛。第二备课本上设计它都有一个教学反

思。你就一节课哪怕你写一条，比如说这个导入环节我可以更有趣一点，激发学生兴趣更好一点，更生动一点；比如说中间难点突破，还有检测方面，我哪点做的还不够，师生互动他都会写的。我们的学校通过期中期末的备课本检查，也会有。

***Reflection during open lesson debrief sessions.*** School leaders from both schools mentioned about the importance of reflection after completion of an open lesson (*gongkaike*). In open lessons, teachers collectively develop a lesson plan, and one teacher pilots the lesson before a final demonstration for observation. Teachers get together to debrief the lesson demonstration and identify the area of improvements in both knowledge and pedagogy (Shen, Zhen, & Poppink, 2007). Open lessons are usually tasked with young teachers. The principal in School #1 mentioned the importance of reflection during the open lesson debrief session.

Besides the three means of engaging in reflection, school leaders from School #1 expected the reflection to occur during post-exam analysis, and School #2 expected teachers to engage reflection through end-semester reports and reviewing students' evaluation.

**Finding #3. Training for LPG group leaders.** All school leaders in School #1 reported there was no formal training offered to the LPG group leaders. The principal in School #1 acknowledged this was a deficiency. On a similar response, the grade director of Grade 10 said that “honestly, there is no training offered on a school-level, district-level or municipal-level” (这个说实在话是市里边也没有，区里边也没有，学校里边也没有). He further elaborated:

In fact, for so many years, we have had no training for the LPG group leaders. These group leaders report to the leadership and deliver messages to lower levels; they lack autonomy, and what's more, in teaching and teaching and research, especially teaching and research, there is no shared vision, nor effective

means or strategy. (SL3.S1) 实际上这么多年，我们在备课组长这一块上面，没有培训。然后备课组长其实很多事是一个上传下达，然后缺少自主性，更缺少对把整个备课组，从教学从教研这一块，特别是教研这一块，并没有说有一个共同的愿景，也没有一个比行之有效的手段或者是策略。

As there were no relevant training available, the LPG group leaders in School #1 learned how to do the job by observing how other LPG group leaders have done their job:

In fact, even if the person has done it before, he/she participates in the groups and experiences the process, so he/she knows why they do what they do. More requirements come into effect after he/she takes on the role because the situation of each grade is different; the focus of teaching is different; the tasks are also different. So, the school or the grade set expectations for the specific grade level they teach and work in, and they will follow accordingly, so there is no training. (SL2.S1) 其实因为他也是在就算他原来没有做过(备课组长)，他也是在这个过程当中层面上他也在在这个集体里面，他也知道为什么大家要做些什么事情。很多更多的要求就是在他担任职务以后，然后因为每个年级他的情况是不一样的，他的教学的侧重点是不同的，他的任务也是不一样的，所以只有他到了这个年级以后，学校或者是年级我们年级层面有什么要求，他们再去做这样的事情，所以没有培训。

In contrast to School #1, numerous training opportunities were offered to LPG group leaders in School #2. The vice principal in School #2 described different levels of training that were offered by several platforms, including normal universities, Academy of Sciences, inside and outside the province. Following was a list of topics he mentioned:

- Normal Universities: the models of new Gaokao, the interpretation of new curriculum standards, and the general training of lesson preparation;
- Academy of Sciences: ways to guide new teachers, and ways to guide LPG group leaders to conduct review plans for grade 12 students;
- Inside the province: school open days.

One type of training mentioned in both schools was the one related to the new college entrance exam in China (*xingao kao*). Teachers learned in-depth about the

philosophy, principles, and requirements behind the new college entrance exam (*xingao kao*). The available training opportunities in School #2 were mainly content related. There were no skills-based training available.

**Finding #4. Assessment plans of reflection.** Two school leaders from School #1 reported that there were no assessment criteria to evaluate the quantity and quality of reflection. The principal from School #1 stated that:

We currently lack models for evaluation of collective teaching and research by the LPGs. We can only objectively or subjectively experience that the LPGs are doing well, but there is no data to support how well it is and the degree of it. (SL1.S1) 备课组的这种团队集合教研的本身的评价，也缺少模型。我们只能客观的或者是主观的感受备课组搞的很好，但至于怎么好、好的程度没有数据的。

On another level, the director of Grade 10 emphasized that:

Reflection itself seems like a spontaneous behavior; the kinds of teachers who take teaching seriously will engage in reflection. For those who do not care about teaching, reflection does not happen; even when they say they do, not so many changes would occur. (SL3.S1) 这都是自发行为。然后而且是一种什么对教学还当回事的老师会做这个事。如果对教学都无所谓的人，其实这教学反思是基本就没有，最多嘴巴上说一下，但情况是没有变化的。

The vice-principal in School #2 assesses teachers' reflection by reviewing their end semester reflection reports. Each teacher is required to write such a reflection report where they will reflect on all the aspects of their teaching, lesson preparation, exams, mentoring, and personal takeaways. Outstanding reports were presented and shared with fellow teachers during the faculty meeting.

### **LPG Group Leaders' Preparation and Facilitation of LPG Meetings**

Table 11 displays the findings for the second research category that discover LPG group leaders' preparation and facilitation of the LPG meetings.

**Table 11***Findings for Research Category #2*

Research Category	Similarities Across Both Schools	Differences Across Both Schools
#2. Preparation and facilitation of LPG meetings	<p><b>Finding #5. Meeting preparation:</b> All LPG group leaders prepared the meeting by previewing the upcoming week's teaching content and teaching progress. Some other tasks cited by the LPG group leaders were identifying the upcoming week's teaching difficulties and students' homework. When LPG used a central speaker to lead partial discussions in the meetings, the LPG group leaders also coordinated with the central speaker to confirm the topic.</p> <p><b>Finding #7. Discussion challenges from teachers' Perspectives:</b> Group meeting discussion challenges included the lack of advance preparation on the discussion topic and the lack of in-depth discussions in the LPG meetings.</p>	<p><b>Finding #6. Discussion format and content:</b> LPG meetings' discussion format and content varied based on whether the LPG group leaders assigned a central speaker among teachers and whether the central speakers made adequate preparation.</p> <p><b>Finding #8. Facilitation challenges from LPG group leaders' perspectives:</b> LPG group leaders facilitation challenges varied in terms of teachers' attitudes toward group collaboration and their willingness to share teaching practices with others. Younger LPG group leaders presented difficulties in solving such facilitation challenges.</p>

**Finding #5. Meeting preparation.** The researcher asked LPG group leaders about how they have prepared the weekly LPG meetings. Seven out of 11 (63.6%) groups mentioned that they would do a preview of the following week's content and tasks, including potential teaching difficulties, teaching content, teaching progress, homework, and monthly exams.

Generally speaking, when we prepare for the LPG meeting (now we call it a "weekly research"), the task of a "weekly research" is actually relatively fixed. Normally, we discuss what teaching progress we have made during this period, and what comes next. We also need to discuss the key and difficult points we've encountered. There is another topic we discuss – because there are many exercises



in grade twelve, we may argue about some of them; in fact, most of the time we argue about a variety of practice questions and knowledge points. (GL8.S1) 一般来说准备一个备课组会的话，现在我们不是每周一研嘛，首先就大概其实每周一研的任务，其实我觉得其实相对来说会比较固定。一般来说就会讨论这段时间我们主要的进度，进行到哪个进度，然后的话就是说要讨论一下进度，彼此之间然后重难点是什么，要讨论一下。还有一个我们有的时候备课的话会讨论一些，因为高三要做很多题，一些题目就是说有一些有问题的，我们会争论，其实大部分时间我们是在争论各种各样的题目，讨论知识点这一块比较多。

If the group leader used a central speaker to lead the LPG meetings, she would check in with the person to ensure the preparation was in place.

Firstly, I usually think about what tasks I must arrange for the week. For the second part, there's usually a central speaker arranged. There is a work plan in place since school has started; they follow that plan. I ask them if they have done their tasks. And then ask them if they've completed the evaluations and other tasks, because I have to tell others. Then we write or make forms, or do something else, basically like this. There is no particular routine, simply make some notes or something else. (GL1.S2) 我一般会想一下一个星期的工作有哪一些任务要布置，然后这是第一个。第二一定是安排好了中心发言人，已经开学的时候就有工作计划，他们就按照那个，然后问一下他们现在搞定了没有这些。然后再问一下他们的我安排那些测评或者是一些东西，你弄好了没有，因为要跟大家说一下。然后写一写或者是做个表格，或者是做一些什么，基本就这样子，也没什么特别习惯，就这样很简单的做一些记录笔记或者什么的。

One group leader gave an example of how he prepared the meeting based on the most significant upcoming event. He used the monthly exam as an example:

Normally, it is related to work in progress or that has been carried out in the latest phase. For example, when we are going to conduct a monthly exam, our LPG meeting this time may focus on preparation for the monthly exam, and the topic of the next LPG may be an analysis and summary of the monthly exam. In between both meetings, when the teaching progress has a mismatch, for example, there will be an adjustment. And if we've noticed that a teacher has done very well in a particular phase and field, next time that teacher might be appointed as a central speaker to share their experience and see if there is anything that others can adopt. (GL2.S1) 一般都是跟新近一个阶段可能要进行的或已经进行的事情要有关。你比如说我们要进行月考了，我们这次的备课组会可能就是月考

的准备，下次的备课组的会可能主题是月考的一个分析和总结。然后中间对于教学进度，大家比如说不统一的时候有一个调整，然后当发现在某一个阶段和领域某一位老师他做的特别好，下次他可能就会作为中心发言人，把自己的经验介绍给大家分享，看一下有没有可以其他人也采纳的地方。

**Finding #6. Discussion format and content.** The researcher believed that how the LPG group leaders facilitated the discussions could impact teachers' experience of reflection in the LPG meetings; thus, the researcher asked a series of questions to learn about the actual discussion in the LPG meetings. Issues related to discussion format and discussion content were prominent in the interview data.

**Discussion format.** Eight out of 11 LPG group leaders (72.7%) assigned a central speaker to be in charge of preparing and leading the group discussion during the LPG meetings. In those groups, each teacher had the opportunity to become the central speaker for at least one time during the semester, depending on the group size. The LPG group leaders determined the topic discussion, and then the central speaker would prepare accordingly. The central speaker would present his or her prepared materials during the group meeting. Sometimes the teachers would need to prepare an upcoming lesson that they would teach next week and then present the materials to other teachers. A group leader from School #1 shared:

I will first announce the topic—what is today's topic, and then members start speaking freely. However, every time we will identify a central speaker. I will announce [the topic]—the topic is this topic. Then this week, for example, Mr. X will talk about some of his own teaching issues from last week, we will then give our thoughts, and finally, we will a which part of the content needs to be strengthened. Followed by next week's teaching progress, which is basically discussed and agreed upon collectively. . . . So the central speaker usually starts by talking about the problems he encountered last week, followed by our thoughts, and then we discuss next week's teaching plan: which part has too many hours allocated, or if we need one or two classes to reinforce last week's content, which means this week's teaching progress may be compressed, or the number of class hours may be adjusted a little. (GL6.S1) 就是我先抛出这个主题，今天的

主题是什么，然后接着就开始自由发言。但是每次我们都会确定一个中心发言人，[主题]抛是我来抛，课题是这个课题。然后这周可能就有比方说由 X 老师他来讲一讲他上周他自己的一些上课的问题，然后我们来进行补充，然后最后大家再统一一下哪一块内容好像还需要再加强一下。然后接着下一周的教学进度的安排，下周教学进度安排基本上就是大家一起来商量了.... 所以一般的确定的中心发言人，一般就是先讲一下上周自己遇到的问题，然后我们补充，然后下周的教学进度就是大家一起来进行讨论。哪部分的课时太长了，或者哪部分可能由于上周遗留的一些问题，所以需要再拿出那么一两节课来解决上周遗留的问题，那么这周的教学进度可能就要压缩，或者课时的量做一点调整。

Basically, first of all, the central speaker of the LPG prepares lessons, just like what X did to the whole unit, because several of them are responsible for this lesson, and then X goes up to introduce their ideas. He first introduces some ideas of the whole unit's lesson preparation and then discusses how to deal with some exercises in practice or the textbooks. They first present their ideas, then we discuss it together, going through the procedure, that is, the arrangement of some school affairs, and finally closing with a summary. (G1T1.S2) 基本上首先就是备课组的中心发言人备课，就像刚刚 X 老师就是把整个单元，因为他们几个人负责这个课，然后由 X 老师上去介绍他们的一个思路，首先就是由他介绍整单元备课的一些思路，然后会针对练习或者说课本上的一些练习，怎么处理的进行一个讨论。先是说他们这个想法，然后我们大家一起进行讨论，然后基本上就是一些杂事的，就是学校一些事务上的安排，最后总结就结束了。

At School #2, when the central speaker prepared their sharing for the upcoming meeting, they were paired with another member from the group to design the lesson materials together. The purpose of designing the lesson materials was to reduce the workload of other teachers, so they did not need to create their own when they taught that lesson unit. The central speaker would share the lesson materials with other teachers, and other teachers had the autonomy to decide whether to use, adapt, or discard.

Every week, there is a central speaker to talk about how he/she approaches a specific unit. I arrange to have a central speaker paired with a member. The two of them will discuss and then form a plan for their lesson, including courseware and other things, zip the files, and then demonstrate at our LPG meeting. After that, we will discuss all of the content of his courseware together. Can we use it? Because each teacher's teaching style is different, we can make changes based on these things they provide. So what does he/she prepare? Our textbooks and

teaching methods, and those key and difficult teaching points, and also the areas we need to pay attention to. (GL1.S2) 每一周都有一个中心发言人。然后针对某一单元他是怎么做的，我安排的时候就是说一个中心发言人，下面还有一个组员，他要和这个组员两个人一起讨论，讨论完之后，然后再形成一个他们两个[人]的一个单元的备课的一个方案，包课件什么的一些东西，资料打个包，然后在我们备课组会议上他就会去呈现去讲，讲完之后我们再一起讨论他那个课件里面的所有内容我们不可行。因为每个老师上课的风格不一样，我们可以结合他提供的这些东西，我们做一些改变。所以他这个备课就是备什么呢，备我们的教材和教法，还有教学内容重难点，然后还有一些我们需要注意的地方。

Talking about having an assigned central speaker for the LPG meetings, a group leader in School #1 had different experiences:

In fact, the central speaker is enlisted to show the school. In fact, I think every time we basically all speak, there is no particular ‘center’ because the topic has been set, and everyone share their views (GL8.S1). 其实中心发言人是写给学校看的，其实我觉得每次基本上大家都发言，没有说特别中心的，因为题目已经定了，大家对这个题目或者说任务已经定了，大家对这件事情看法大家都说的。

**Discussion content.** Among a list of content that was mentioned by the participants, all groups (100%) reported that they discussed upcoming week’s teaching content and unified teaching progress. The content could be categorized into three areas: teaching related, task-related and miscellaneous.

Discussing teaching progress in LPG meetings enabled teachers to unify the pace altogether as teachers usually assigned the same homework in the same subject across the grade level, and the students were also tested on the same materials in exams. A teacher from School #1 described how the discussion content determined the meeting purpose.

First of all, in terms of the main content of our LPG activities, I think it determines our goals and their significance. I think the main content of the LPG is to unify the progress of teaching. I think this is the first important part, i.e., what content do we want to complete during this period, or this week; what is the progress of teaching, an issue involved in every teaching and research activity.

The second important part will also involve this part—exchanging ideas about students' learning progress, what problems do we have, what methods do we use to improve. Especially when the content of the preparation group activities is to analyze and evaluate the examination papers, more effort is spent on analyzing the learning progress and examination results. The third one is the suggestions on dealing with the teaching content, i.e. what is the teaching focus of this part? What are the difficult points? What is the key? For which content should we appropriately lower the difficulty level during teaching? (G6T1.S1) 我首先从我们备课组活动的主要内容上来看, 我觉得这个活动的内容可能就决定了我们他的一个达到的目的和意义。我觉得备课组的比较主要的内容, 统一教学的进度。我觉得这是第一项比较重要的。就说我们这一段时间, 或者这周我们要完成哪些内容, 教学进度是怎样的, 每次教研活动都涉及到的一个问题。第二也会涉及到这个部分, 交流一下学生的学习情况, 存在哪些问题, 有什么办法进行改进, 我认为这方面是有的。尤其是当备课组活动内容是对考试试卷进行分析和评价的时候, 可能更多的就研究学情和考情的问题。第三就是说他对教学的内容也有一个处理的建议。就说我这一部分教学的重点是什么? 难点是什么? 关键是什么? 哪些内容可以适当的降低教学难度?

That is to say, how many teaching tasks do we complete this week, for example, how much progress do we make with the matching practices, and for homework assignment, are we going to assign a composition or something else this week, basically like this, in steps. (G1T2.S1) 就是说这周我们完成多少教学任务, 然后比方说我们有配套练习要弄到哪里, 然后比方说作业布置, 这周是不是要布置一篇作文还是布置什么, 基本上就是这样, 按步骤这样操作的。

Sometimes teachers also spent a significant amount of time discussing miscellaneous topics, such as competitions and other school activities.

Sometimes there are some miscellaneous tasks. For example, there could be a competition, for which classes sign up, and then we'll see how to operate. Another example would be other activities, which we'll also briefly mention. Or if an exam is coming soon, or a mid-term exam is around the corner, what's the teaching progress. And then after the exam, what activities do we arrange and so on. Anyway, it is basically like this. (G1T2.S1) 有的时候有点杂事, 比方说有个什么竞赛, 各班报名, 然后看看怎么个操作。再比方说有什么活动, 怎么样或者是顺带着就说一下, 比方说快考试了, 快期中考试了咱们的进度。然后再就考试之后, 我们安排什么活动等等, 反正基本就是这样的。

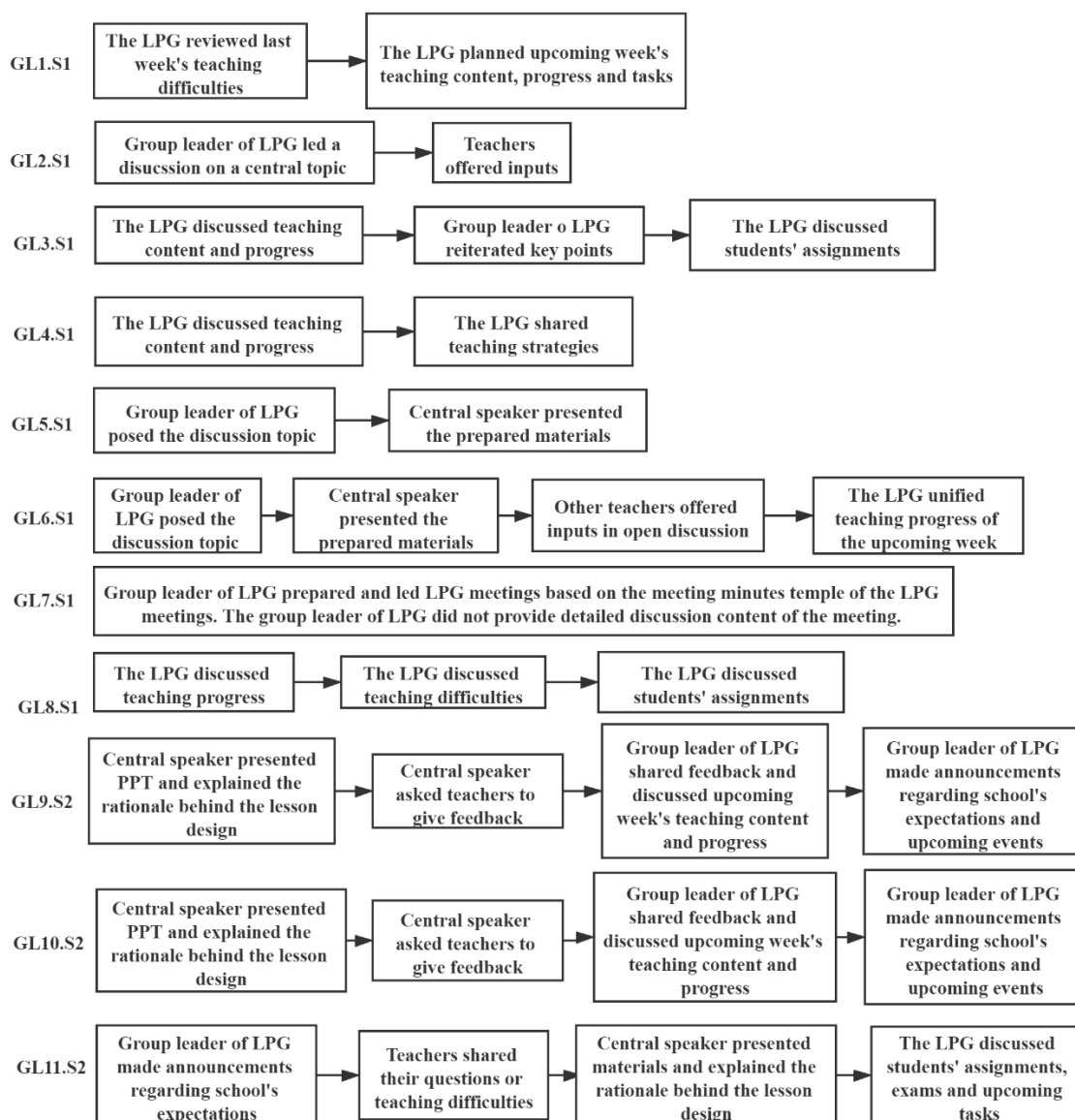
Besides, teachers spent the time to allocate tasks if that was how their group got things done.

LPG activities usually include, for example, at the beginning of the semester, composing a learning plan and learning progress for this semester, and assigning some basic tasks, such as who will design the chapter test questions, or who will design the knowledge points test, a basic allocation like this. So, there will be such a plan at the beginning of a school semester. (G7T1.S1) 备课组活动通常比如说要开学的话，它就有一个我觉得制定本学期的这种学习计划和学习进度，然后分配一些基本的一个任务，比如说章节他的测试题的谁出，或者知识点的测试谁出，就这么一个基本的分配，就是在开学第一次时候会有这么一个[计划]。

Figure 3 presents the discussion content of all 11 groups which were shared from the LPG group leaders.

### **Finding #7. Discussion challenges from teachers' perspectives.**

*Lack of advance preparation.* When the researcher asked teachers to share how the LPG group leaders facilitated the discussion during the LPG meetings, a veteran teacher from School #1 who taught Chinese subject, stressed the importance of advance preparation on the discussion topics before coming to the group meeting. In the past, the teacher had served the group leader role for many years. The teacher believed that the discussion results had been ineffective due to a lack of advance preparation on the discussion content before the meeting. For the purpose of having a productive discussion, teachers should have come prepared to participate in the discussion by giving thoughts to the discussion topics before the meetings:

**Figure 3***Discussion Content in LPG Meetings of All Groups*

Everyone, especially the central speaker, must be prepared. We have done it as well. For the preparation, this time one of us went to Shanghai, he came back and shared some teaching ideas from Shanghai. He was there for a week or 10 days. What he shared was more organized and in-depth. It influenced our ideas and even our guiding principles in teaching. . . . For example, we have so many knowledge points, about 10 to 20. Which knowledge points in your class are relatively weak? Let's discuss why they are weak, what problems have emerged? The central speaker could prepare all of these. Otherwise, if you simply improvise

without thinking it through, you'd probably miss some points. Or at least the effect is not very good. Anyway, I think presentation without preparation is often unpolished and rushed. (G4T1.S1) 每一个人，特别是主讲，一定要有所准备。我们也做过，凡是做准备的时候，真的，你像这次有一个去上海的，是不是我们回来慢慢交流一下对上海的一些教学的思想，他传达一下，他来讲，那么他就是整个去了一个星期或者十来天回来。他就讲的就比较有条理，有的东西就比较深刻，甚至影响我们的一些思维，影响我们的教学指导思想都有可能...比如说我们那么多个 10 到 20 个知识点，你班上哪个知识点比较薄弱，我们探讨来算算为什么会比较薄弱，出现了什么问题，这样研究就会准备起来就好一点。否则你临时放那里资料通知那里，你讲起来说句实话，他都没有怎么想，就只能够平时怎么想到多少就说多少，起码就效果不太好，反正是我就觉得如果说没有准备的东西，常常都是比较粗糙敷衍。

Likewise, one teacher from School #2 also argued about the results of discussing the upcoming week's teaching content:

In the current LPGs, we simply share our ideas. Sometimes I have not taught the unit under discussion. For example, I have not taught the fifth unit, and I don't know the content very well, so all I can do is just take a look at other people's ideas. When I get to teach that class, I might not use his courseware at all, or only use it as a reference. It's probably the same for everyone, just a reference. (G1T1.S2) 因为我们现在小组备课就是说的都是他的想法，其实那个单元我都还没有上，就像第五单元我都还没有上，里面内容我也不是特别清楚，所以我也只是看一看别人的想法。然后到时候我自己在上课的时候，可能完全都不会用他的课件，或者只是一个借鉴，应该大概每个人都是这样的，只是一个参考。

***Lack of in-depth discussion.*** Three participants out of 11 groups (27.27%)

suggested that there was a lack of in-depth discussion during the LPG meetings.

Although a small percentage pointed out this shortcoming, the researcher believed this finding was noteworthy because discussions that encourage reflective thinking would involve in-depth discussions. This shortcoming also echoed school leaders' expectations on LPG group leaders' role in facilitating teaching and research related topics. Teachers spent a majority of time on discussing the teaching content, especially the knowledge aspects, but they did not pay enough attention to students' mastery situations:



I personally think that for our grade twelve teachers, in fact, there's no problem in terms of professional knowledge; even if we do not communicate much on professional knowledge, as long as they are confident, we should be fine. Assignments all passed. . . . In terms of chemistry, we spent time discussing how to deal with a certain knowledge point and how to solve this problem. Teachers may have their own ways of dealing with it. Their teaching methods are different, their ideas are not exactly the same, the content is the same, the progress is the same. But the way each teacher deals with it, how it is organized, how it is presented, what teaching methods they use, what ideas they hold, and so on, are very flexible, everyone is different. Since everyone is different, there is a need to focus on discussing which problems are common problems for discussion. There are only a few such problems. These might be related to the knowledge points in each teacher's chemistry assignments. They might think there is no problem, all OK, there is nothing to discuss. But I think when there is no problem with the knowledge, when students learn it, what are their difficulties and what problems do they face? No matter what class or grade you are in, there may also be such problems that we can discuss. What method can we adopt to deal with them better? Solve these issues for the students, regardless of their level. In fact, we have not discussed such topics. (G6T1.S1) 我个人认为就是像我们几位高三的老师，其实专业知识上没有问题，专业知识上他认为我不沟通，我认为是有把握的，是正确的，没有问题，都没问题的。作业上都过关了. . . 从我们化学这个角度来看，可能具体就是某一个知识点到底怎么处理，或者这个知识点怎么解决，这问题怎么解决，可能说到这，所以说教学上的真正属于比较大的疑难问题，从而不是一道题和一个小知识点上了，我猜想可能这样，这个方面处理可能还相对少。就说我们可能教师有自己的处理办法，教学方法不一样，思路不完全一样，内容是一样的，进度一样，内容一样，但是每个老师在处理起来，它怎么组织的，怎么呈现的，教学方法上是什么，思路是什么，等等，这些都是很灵活的东西，每个人都是不一样。每个人都不一样之后，他这个问题就哪些问题有集中讨论的必要，一定要讨论这样的共同的问题，就少，真少，可能是基于我们每个老师对化学的作业知识上，他认为是没什么问题的，他认为是都 OK 了，没有什么要讨论的。虽然知识没问题，但实际上这个方面我想就是说你这个知识上没问题，但是学生在学这些个化学知识的时候，他们的难点问题是什么，他们共同感到难点问题什么，不管你什么班什么档次的，可能这样也还有，可以把这些问题拿出来讨论，我们怎么实际上是采取什么这个方法，处理方法更好，让这些同学不管哪个档次的同学面临共同都能很好解决，需要找到这样的问题，实际上是没有这样问题来涉及到讨论到。

In addition, another teacher who was also in charge of teacher professional development at School #1 expressed concerns about how group discussions were limited by the content of LPG meetings' minutes template. The school required each group to fill

out and submit the meeting minutes to the appropriate office. The meeting minutes' elements included: understanding of the standards, students' learning situation, teaching difficulties, interventions, homework, and guidance of students' learning methods. The teacher commented that the LPG meetings should have been focused more on the "research" aspects:

We should not be limited to that piece of paper. For example, during our LPG session, we can figure out how to approach the review class, how to improve a particular point of a new lesson, or how to make a breakthrough in teaching and research; we have not done enough on these topics. . . . I think in terms of education, whether it's the teaching group or the LPG, we should spend more time on research. Because everyone can teach the content, we still have to "research," even if the research fails, I think it is worth it, because I think we should focus not only on what we teach, but how to teach effectively, this is something we have to think about, I think currently we're not doing enough. (G7T1.S1) 不应该只局限于那张纸, 就比如说我们也可以搞一个好比说我们备课组这段时间, 我们研究复习课怎么上, 我们研究这种新课的某一点, 我怎么去提高, 或者就是教学和教研上某一个问题的突破, 现在还是进行得不够. . . . 我觉得其实不管教育就是说科组教学组, 还是我们讲备课组, 它其实更多的应该是花在研这个方面。教因为是每个人都能去基本上完成这样一个任务, 就还是要研, 即便这个研是失败的, 我觉得是值得的, 因为现在我就琢磨应该说把教了给学生, 而是说怎么去教这个上课效果才会好, 这应该是我们还是要去琢磨的, 我觉得这一点还是不够。

#### **Finding #8. Facilitation challenges from LPG group leaders' perspectives.**

There were complaints from LPG group leaders about teachers' attitudes toward group discussions and their lack of willingness to share practices with others. At School #1, one group leader shared that, due to the different class placements, when teachers who taught the "outstanding class" shared their teaching practices, the teachers in the "parallel class" claimed those experiences and practices were not relevant and practical to their teaching context. Another group leader from School #2 reported that although the group leader assigned a central speaker for each meeting, the quality of the central speakers'

preparation was deficient, and the teachers did not show interests to have discussions during the LPG meetings:

You know, people do not want to spend time doing it. For example, when we were about to prepare for the second unit, they presented a very rough idea; they did not want to prepare the content carefully. Sometimes the courseware they provided were downloaded from the Internet. They are not serious about what they shared, and others have nothing to say. Also, some people were urging to end the meeting early; they claimed that they had other things to do - they didn't like LPG meetings. They all wanted to get it done in 10 minutes and leave. They thought spending time on the discussion was a waste of time. In fact, during the regular LPG meetings, we should determine which points in a unit are essential, but they are not willing to participate. Anyway, they are not willing to sit down and talk about it; they feel like it is a waste of time, they have to go home, or do something else, and correct students' homework. (GL2.S2) 你知道吗，在做的时候大家不愿意去花时间做。一个是那次该第二单元的备课了，然后他们讲得非常的粗糙，就不愿意去仔细的准备发言内容，然后课件有时候可能也是网上 download 的。他们分享这样他们说的都不认真，其他人也没什么好说的，然后还有就是有些人在催，他们还要干什么事情去，就是说不愿意开备课组会。他们都想着十分钟就搞定就走。然后就觉得你在探讨那种是浪费时间什么的。其实正常的备课组会应该这一单元哪些点是重要的，要确定下来，但是他们不愿意参与...反正整个就是说大家不愿意坐下来谈，他不愿意坐下来谈，就觉得浪费时间，他们还要回家，或者是还要干嘛，改作业，还要改作业题。

The school had a requirement about the meeting duration, but teachers tried to sneak out after the administrator took attendance:

The school requires us to hold subject group meetings. Each meeting probably lasts at least 2 hours or 1 1/2 hours. At least the school stipulates that there is a duration requirement. But people are not willing to (stay), they sneak out; in fact, if the school can strictly enforce the meeting, and we spent the time on discussion, then there may be an outcome. . . . The main issue is that the teachers do not cooperate. Since the teachers are not willing to spend their time, I think it would help if the school makes it mandatory for you to be in the classroom for an hour and a half. But now they stay for half an hour and then leave the meeting. What can you accomplish within half an hour? The administrative personnel from the Office of Academic Affairs would come to take attendance, once that's done, the teachers start leaving. Half an hour is barely enough delivering announcements, the discussion has not even started; at least 1 hour is needed for discussion. If we can guarantee we hold the meeting weekly, and each meeting lasts an hour, then we can produce some outcomes. (GL2.S2) 学校要求我们开科组会，要开好像是至少两个小时还是一个半小时，至少是

要学校规定的，是有时间的。但是大家都是不愿意，偷偷的就走了，其实如果说能够严格执行这个时间，大家讨论时间长了就讨论出来东西了.... 主要是因为老师们不配合，老师连时间都不愿意给，就是说如果学校硬性要求你们在教室必须在一个半小时，我觉得还有点保障。但是现在是他们他们待个半个小时就走了，那你说半个小时能干什么，是不是？或者甚至半个小时，就是教务处的考勤来，考勤人走了，然后就可以走了。就是说半个小时之内的会，除了说一下别的正常的事情都还没讨论，才刚展开，你说不得一个小时。如果每一次备课组会能保证一个小时，每周都开，还能有点东西是吧。

As this group leader was new to this role, she consulted with an experienced teacher about her situation, and the experienced teachers suggested her:

Do not manage people, he said, I do not need to manage people in my group. My role is to pass messages from the top leadership to the team and then arrange tasks. (GL2.S2) 他说你不要管人，他说你不要管这个组里的人，你只需要一个上通下达的作用，就是传达领导的旨意，然后就是安排任务就行了。

Teachers’ Experience of Reflection in LPG Meetings

Table 12 displays the findings for the third research category that discover teachers’ experience of reflection in the LPG meetings.

Table 12

Findings for Research Category #3

Research Category	Similarities Across Both Schools	Differences Across Both Schools
#3. Experience of reflection and reflective practice	<b>Finding #9. Reflection in LPG meetings:</b> Teachers reported that they engaged in reflection on occasion, like post-exam analysis and open lesson debrief sessions. Group leaders did not lead discussions that encourage reflection as a routine in LPG meetings.	

**Finding #9. Reflection in LPG meetings.** The researcher learned about teachers’ perspectives on whether and how LPG group leaders have encouraged reflection through group discussions in LPG meetings. Six out of 11 groups (54.5%) said that they engaged

in reflective discussions in LPG meetings for the occasions of post exam analysis and open lesson debrief sessions. Four out of 11 groups (36.4%) said that LPG group leaders rarely led discussions that encouraged reflection in LPG meetings: “Regarding the teaching methods and events, there’s basically no reflection, mostly self-development” (G1T1.S1) (关于教学方法和事件，基本上都是不回顾的。都是自己发酵和成长)。

One out of 11 groups (0.1%) said they occasionally had reflective discussions in LPG meetings, but having such discussion was not an essential element of the LPG meetings. One group did not mention how they engaged reflection as a group.

Although six out of 11 groups (54.5%) groups engaged in reflective discussions in LPG meetings, these discussions did not occur as a routine considering the limited frequency of post exam analysis and open lesson debrief sessions.

Some participants revealed their insights about the possible reasons for the absence of reflection during regular LPG meetings. External factors played a vital role, such as how the school stressed the importance of engaging reflection in LPG meetings, and whether there was any structure to support the reflective culture. One participant believed that “it depends on how we make great efforts to advocate (reflect) or integrate all aspects in the system” (G8T1.S1; 我就是说这里边就要看我们怎么来花大力气的来倡导（反思）或者把风气各方面的制度)。

Besides external factors, teachers emphasized internal factors, such as personality, personal habits, time allocation, energy, and passion for teaching.

To tell the truth, there are few reflections. The issues behind, I think, might be the energy level of each teacher, their enthusiasm, the allocation of time, and the difficulties faced by each individual. (G8T1.S1) 实话实说比较少（反思）。我个人思考的问题就是比如说这里面涉及到每个老师的精力的问题，

投入的热情的的问题，时间分配的问题，各个人有各个人的不同的元素的困难。

Even reflection occurs on an individual level; the participants may not have shared.

This reflection is basically absent on the general meeting level; it's more at the individual level. Some people have a good habit of reflection, and they grow faster. Engaging in reflection is a personal preference, nothing more than that. Maybe you would think about the way you teach. They'd probably share experiences that reflect more on their strengths rather than weaknesses—they usually feel embarrassed about the latter. (G3T1.S2) 这个反思在整个会议层面基本上不会有，更多的时候就是看个人。有的人（反思）习惯比较好，成长比较快，进行一个反思就是个人喜好，没有什么。可能你想想觉得自己上课的方式，可能更多的分享是一些好的方面，可能是一些不好的方面，对于人来讲，不大好意思讲出来。

## **Emergent Findings**

The researcher identified three emergent findings in this study. Although the emergent findings did not directly answer the research questions, the researcher believed that it is crucial to highlight these emergent findings as they could be an indication for future directions of the research.

### **Emergent finding #1. Reflection moments from teachers' perspectives.**

Teachers engaged in reflection on selected occasions. The teachers stated that reflection usually happened during open lesson debrief sessions and during post-exam analysis. Whether a teacher reflects on their teaching practice was a personal preference; it was highly self-dependent.

***Open lesson debrief sessions.*** Six out of 11 groups (54.5%) mentioned that reflection happened during open lesson debrief sessions. During an open lesson debrief session, the teacher who was observed would share how they have approached the lesson and the rationale behind it. The teacher would also self-critique their lesson before others

provide insights and suggestions. Afterward, the teacher who was observed writes out the reflection formally.

We do a simple reflection after each class. If you just did an open lesson, you have to write it (reflection) down, and this is a more in-depth [reflection]. Then we write a summary for every semester, or there is a debrief after every major exam; this is actually a form of reflection, which may be more comprehensive. (G7T1.S1) 我们每一节课上完之后就是简单的反思。如果你是公开课的，你要成文，这个就是稍微深层次一点。然后如果是假如说每学期的这样一个总结，或者说每一次大考后也会有一个总结，这其实也是算一种形式的反思，这种可能更加的全面一些。

For example, we ask young teachers after each open lesson to write a reflection. My department is in charge of this. It is a written reflection because after the open lesson, both the LPG and the subject group will have a simple lesson evaluation, the teachers also have their own ideas [about the open lesson]. (G7T1.S1) 像我们要求年轻教师，正好也是我这个部门负责，我就让他们上公开课，就一定要做反思。就是书面上的反思，因为他上完公开课，不管备课组还是科组都会对它有一个简单的一个对评课，自己也会有一个想法。

One participant highlighted the limitations of open lessons and open lesson debrief sessions.

In fact, there are many teaching methods that you used in an open lesson, you would not use them in regular daily classes. Because, for example, it will take a lot of time. And when you do a regular class, you would not spend so much time to prepare one single lesson like how you prepare for an open lesson. Also, in this case, for an open lesson, we usually teach less content for the sake of increased students' participation, so you could not include too many knowledge points in one lesson. (G5T2.S1) 因为其实公开课的有很多做法，你平常上课应该是不大会用的，因为比如说这样会花好多时间，因为你平常常规课的话，你不可能有那么多时间去准备像公开课那样子，然后而且就是这样的话，公开课他应该上的内容会稍微少一些，因为你为了让学生去充分活动，所以你这个知识点就不能够设置那么多。

**Post exam analysis.** Five out of 11 subcases (45.5%) mentioned that reflection frequently happened when they conducted the post exam analysis. Teachers were motivated to engage in reflective discussion after seeing the students' summative test scores; they would compare their performance outcomes with other teachers.

The first question we often discuss is what the students' mistakes are, what the main problems are, and what the common issues are. In other words, where did the students lose points, what types of errors—the focus is more on the students' exam papers. This is number one. Second, we can also analyze the scores of each question for each class. This may be a little more detailed. Then we can find out the problems, analyze the situation of each class, and then what measures we will take in the next step of teaching to make up for these problems. For example, some areas in chemistry are relatively weak; we will focus on the type and content of the questions in the next step of teaching, and each exam will focus on these areas to strengthen them. (G6T1.S1) 讨论的点第一个问题就是学生错在哪，这个比较多，学生错在哪？出现的问题主要是什么，失分点，所说的存在的普遍问题是什么，或者说就是说有哪些失分点，学生的错误类型是什么，有哪些主要错，这针对学生答卷比较多，这是一。第二就是我们还可以研究每个题，各班的得分情况。这就可能稍微细化一点了，大体是只能这样。然后就说把他的问题找出来，各班的情况分析一下，接下来就是我们下一步的教学当中采取什么样的办法来弥补这些问题。比如说我们之前化学里面有的地方比较薄弱，比如这部分比较薄弱，我们在下一步教学中就针对题型和内容，每次考试里边都把它重点在设计进来，再加强，掌握的。

A teacher from School #1 suggested that teachers should reflect on their teaching after each class. She shared how a lesson could affect her mood and how she proactively sought alternative ways of teaching if she felt the lesson did not go well. She also suggested how the institution could support and encourage reflection:

In fact, I think the most common reflection happens after the students' assessments. After the exams, students' scores are the most objective indicators. The scores reflect students' ability and the degree of knowledge mastery. However, in my opinion, reflection should take place after every class. Personally, if I didn't teach a class well, it would affect my mood for the whole day. I'd think about how to improve, how to make the students more excited, how to maintain their enthusiasm in learning, or how I can make the thinking of students more explicit, visible, that is, to improve the efficiency; For example, one suggestion would be that we set a standard for reflection—for example, we write a reflection report every week or half a month and share it with others. Simply asking the teachers to write them will not work—you have to discuss and share, so they can express their opinions. If you just ask me to write it, I may not take it seriously; there is no encouragement to improve the quality of work. You have to have a platform where they can exchange ideas. Because when you write it, you are still having the dialogue internally with yourself. When you exchange and share with others, you listen to others' challenges, or other people's improvement measures, which is very good. (G8T1.S1) 反思，其实大部分课程我估计最常见的都还是学生测评之后，就是考完试之后分数是最客观的，他能够反馈学生



对知识的掌握的能力和程度，所以一般是这样。但实际上我个人思考来说，其实反思应该发生在每一节课后，每一节课后。就我个人就是这样，如果这些课我要上得不好，我会影响到整个一天的心情。我都会觉得怎么来改良，怎么能够让学生更兴奋，保持他的学习的这种积极性，或者说我自己怎么做才能够更让思维让学生的思维更外显一些，可见一些，也就是效率会更高一些...比如说，这也是一个建议了，反思的标准，有一个比如上完课之后隔一段时间，对一周或者是一半个月有一个反思总结，或者说是分享。你不能说让老师只写，你得有讨论有探讨有分享，就说有他外显的过程。如果你只是让写，我可能应付了事就交了，你这个并没有促进到工作的质量的提升。就说你必须得让老师有个平台有个交流的平台，因为你写你还是你自己跟自己对话。你交流你就是打开听听别人的困难，或者说别人改进的措施，这就很好。

***Self-dependent reflection.*** The institution has expectations and requirements on reflection for teachers who just recently graduated and started their careers in teaching.

The school only advocates this, there is no requirement. Of course, the school has a small number of newly graduated teachers who are required to do so. There are some mentor and mentee pairs. For us that went down the self-development path, we just nurture our own ideas. It is an excellent habit to have a reflection in written format, but few people do this. (G3T1.S2) 学校也只是提倡，没有什么要求，当然学校有一少部分刚毕业的老师是有要求。有一些师徒结对的呀，像我们这种是属于野蛮生长的，就是自己有什么想法，有时候自己会去想一下。因为就是这样形成文字是一个很好的习惯，但是很少会有人做这个事。

Teaching reflection is mainly done by each individual themselves, less in the form of a discussion. Most of the teaching reflection is about the problems encountered during implementation. It can be written down at any time. Or it's through practical action, not written out. It's all about what's done well, what's not done well. It could be directly used during the next lesson, or there might be a specific action in default, so there is no further discussion. (G8T2.S1) 教学反思可能主要是自己在做，在讨论的情况下就比较少。教学反思大部分自己在实施的时候遇到一些什么问题，然后自己随时地去写下来，或者是通过实际行动没有写出来也可能的。但是都是觉得这节课中哪块做得好，他做的不好，直接下节课沿用，或者是在跟可能是算是一个默认的一个具体的行动了，就没有再去讨论。

**Emergent finding #2. Discussion outside LPG meetings.** When the researcher asked a series of questions about group discussion during the LPG meetings, five out of

11 (45.5%) groups mentioned about how discussions also occurred outside of the meetings. An English teacher from School #1 shared:

Maybe sometimes you do not necessarily (discuss it) in the meeting, maybe you will talk about it in the office. For example, sometimes, I might be a little ahead in the teaching progress, and I usually type out the answers to the exercises or something. I feel like since I used them, I could share them with people in the group, so I post them in the group. Afterwards some of them would say that what I did looks great, and they would follow suit. (G1T2.S1)

可能有的时候就不一定在会上（说），可能在办公室就会说了。你比方说，有的时候，我可能进度稍快一点，我习惯上把一些，比方说练习的答案，或者什么，我就打出来。我想我既然我用了我就共享，我就给组里的人，就发到群里了。然后他们有的人就会说你整的挺好，怎么样，完了我也这样整，就随口说。

At School #1, teachers claimed that the seating arrangements in the office have made it easy and accessible for them to have discussions every day. The school intentionally put all teachers from the same grade who teach the same subject matter in the same office. They have had the opportunity to share their teaching difficulties daily.

Every day, because four of us all sit together, when I come back from a class, we'd share our experience with homework grading, we'd come back to discuss how come the homework came out this way, what was it that was not taught well. We would encounter different problems every day, and we don't necessarily hold a special meeting for it, but rather, since we all sit in that circle, we'd go back and immediately share our problems in class, and the areas we feel like we need to teach again. For example, today, my mentor, the group leader of LPG said that we should slow down the pace when teaching the oxidation part of valency, you only realize it in class that their understanding of valency is not very solid, so you have to explain the concept of valency before you can continue with the class. Like this, no special meeting, but in fact, we communicate about teaching problems every day. (G5T1.S1)

每天我们因为四个不都坐在那嘛，我（上课）一回来，比如说我们作业改得怎么样，我们就回来跟他讲，就会说这个作业为什么会做成这样子，哪里讲得不好，其实就是会每天碰到不同的问题，其实没有说特意说要开一个会，但是其实我们都坐的刚好都在那一个圈，所以我们就一下课回去就跟他说，我们上课遇到哪里有问题，觉得哪里要重新讲。比如今天师傅，备课组长就说了，他说化合价那块就氧化还原一定放慢（讲），上了课你才知道原来他们在对于化合价的理解也不是很深刻，所以你先要给他补化合价的概念以后你才能继续往下上，就这样，就是没有特意开会，但是其实每天其实我们也在进行问题的交流。

At School #2, participants emphasized how they discussed and shared through instant messaging software, such as QQ or WeChat. Every group in this study had its own chat groups through these two platforms. Two participants from School #2 shared:

Generally speaking, when we encounter difficulties, we discuss them in the LPG meetings, or in the chat groups of our own LPG when we do not get to discuss them in the meetings. Normally, the group leader is not the first person to answer the questions; he/she would usually give a pertinent suggestion or a final summary by the time the teachers have done discussing, and also offer some guidance on practices. (G1T1.S2) 一般来说遇到难点, 我们基本上在备课组会的时候, 或者说平时没有在开备课组会的时候, 基本上会在备课组群里面会探讨。一般备课组长不是第一个站出来回答问题的, 一般都是老师们讨论, 然后讨论完了之后他会给出一个比较中肯的建议, 或者说最后的总结, 然后一些做法上的指导。

Since our (discussions) are more often through our QQ group, we communicate any time there's an issue. So, we don't only work on LPG issues only during the LPG meetings. We communicate any time we encounter a problem, and ask everyone else about the pacing, how they feel, and then we have many resources which we could share immediately. (G2T1.S2) 像我们更多的还是通过 QQ 群, 随时有问题随时沟通, 所以备课组会也不是说, 就备课组的工作并不是说完全集中于备课组会这一个小时间段。因为我们平时随时你碰到了一个问题, 随时就沟通, 问问大家是怎么上的, 大家上到哪了, 感觉怎么样, 然后有好多东西资源, 然后马上就共享一下, 大家想用就用。

**Emergent finding #3. Communication chain.** The researcher asked all school leaders about how they communicated expectations and transmitted school announcements to the LPG group leaders. Both schools reported that they communicated by holding different levels of meetings. Daily communications were made through WeChat (multi-purpose messaging app) or QQ groups (instant messaging software).

The principal from School #1 said he empowered the grade directors as mini principals, “at the grade level, they are the supreme commander. They hold full responsibility for that grade level.” According to the principal, all teachers in the same grade level would attend the Educational Work Conference to learn about the expectations. The school also held meetings for the LPG group leaders where the LPG

group leaders get notified about the expectations, new tasks, and announcements that need to be communicated to their respective teachers in their group. The grade director of Grade 10 mentioned that they have WeChat and QQ groups for all the LPG group leaders. He shared:

When we hold educational work conferences, we emphasize various principles. We talk about a theory and then its significance, and then the real practice. In other words, what key points should we grasp in the LPGs; we should not name too many. Moreover, these points should serve definite purposes, be very clear and easy to operate on. The next step is to hold a meeting for the LPG group leaders. During the meeting, they should understand that it is necessary to put things into practice during their Weekly Research Meeting (LPG Meeting; SL3.S1). 开教育工作会议的时候，就要把年级的这种各种精神要进行一个强调，强调以后先讲理论再讲意义，再讲操作里边尽可能简化几条出来，就是说我们在备课上课里边，要抓哪几条，就不要说的太多。而且这几条最好是针对性非常强，很明确，好操作。然后接下来就是给备课组长开会，给备课组长开会的时候，就要把这些东西，就要让他们在备课组开会的时候，就开每周一研这种教研会的时候，就要把这东西落实下去。

Similarly, the vice principal from School #2 stated that the school usually held a meeting for the group leader of LPGs before a semester starts. As the vice principal oversaw the teaching division, he was in charge of setting the requirements and expectations for the Subject Groups and LPGs:

At this meeting, three school leaders will make a keynote speech that presents the programmatic and guiding opinions on the teaching requirements, education management, school-running philosophy, and school culture. For example, I am in charge of teaching. According to the overall requirements of the school, I will come up with specific requirements for the Subject Groups and LPGs. For example, the requirements for the Subject Group Leaders might include 1, 2, 3, 4, 5, 6, 7, 8 or 9 expectations, in terms of how to carry out the activities in the Subject Groups, and what should be a focus in terms of the development of Subject Group Leaders. One of the essential tasks in the development of a Subject Group is the development of the LPGs. How should the LPGs “prepare” for a lesson? The emphasis of the LPGs should be on the “preparation.” You put forward specific requirements for the LPGs on how to prepare. (SL4.S2) 在这个会议上，三个校领导会做一个主体发言，这个法人它会对整个学校的教学要求，教育管理，办学理念，学校文化，给相当于一个纲领性的指导性的一个意见。然后比如我分管教学形成这条线的，就是根

据学校的总体要求，拿出具体的对科组和备课组的具体的要求。比如说对科组长这个层面有哪些要求，科组长这个层面就有 12345678 或者九条，科组长怎么开展（活动），科组长自身建设要注意什么问题，科组长要注意什么问题。科组建设当中其中重要一条就是备课组的建设，备课组之间是怎么备（课），备课组就强调要在“备”字上下功夫，怎么备，你对备课组就提出具体要求了。

## **Findings From Questionnaires**

### **Group Learning Survey**

The GLS was adapted with permission from Dechant and Marsick's (1993) Team Learning Survey to discover the effectiveness of the LPG as a learning group. This shortened GLS contained 39 questions that assessed three major components: Team Learning Outcomes, Team Learning Processes, and Team Learning Conditions. An average score was calculated for each participant. All items were measured via a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The researcher asked all participants who were being interviewed and observed to complete the questionnaire. A total of 49 questionnaires were distributed; 41 participants completed the questionnaire. The response rate was 83.7%.

The researcher calculated mean, standard deviation, and the percentage of each response (from firmly disagree to firmly agree) in all 39 items. Means and standard deviations of the scales are presented in Table 13. Means and standard deviations of each item in GLS are presented in Appendix O.

The component of "Team Learning Outcomes" had the largest standard deviation (5.81), which indicated that the responses in this component were more spread out than the other eight components. The second largest standard deviation appeared in the "Team Learning Conditions: Team Appreciation" (4.4), followed by the "Team Learning

Conditions: Operating Principles” (4.19), “Team Learning Conditions: Individual Expression” (3.57), “Team Learning Processes: Crossing Boundaries” (3.39), “Team Learning Processes: Integrating Perspectives” (3.1), “Team Learning Processes: Framing

**Table 13**

*Overview of Means, Standard Deviations and Percentage of Responses in Group*

*Learning Survey*

Components	Items	Mean (SD)	Firmly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Firmly Agree	TOTAL
Team Learning Outcomes (Range of Scores: 34-56)	Q1	49.39	0%	0%	0%	0%	5%	24%	71%	100%
	Q7	(5.81)	0%	2%	2%	0%	7%	44%	44%	100%
	Q13		2%	2%	5%	5%	7%	44%	34%	100%
	Q19		0%	0%	7%	2%	12%	32%	46%	100%
	Q24		0%	5%	7%	5%	29%	32%	22%	100%
	Q29		0%	0%	0%	2%	12%	37%	49%	100%
	Q33		0%	0%	0%	2%	5%	41%	51%	100%
	Q36		0%	0%	0%	0%	5%	39%	56%	100%
Team Learning Processes: Framing & Reframing (Range of Scores: 10-21)	Q14	17.07	5%	7%	7%	2%	24%	32%	22%	100%
	Q25	(2.58)	0%	0%	0%	5%	7%	61%	27%	100%
	Q37		0%	0%	2%	10%	20%	41%	27%	100%
Team Learning Processes: Crossing Boundaries (Range of Scores: 21-35)	Q20	29.88	0%	0%	0%	2%	5%	37%	56%	100%
	Q26	(3.39)	0%	0%	5%	5%	24%	39%	27%	100%
	Q34		0%	0%	2%	10%	24%	39%	24%	100%
	Q35		0%	5%	0%	5%	27%	41%	22%	100%
	Q38		0%	0%	0%	2%	7%	54%	37%	100%
Team Learning Processes: Experimenting (Range of Scores: 6-14)	Q3	12.59	0%	0%	0%	2%	7%	41%	49%	100%
	Q15	(1.64)	0%	2%	0%	2%	10%	39%	46%	100%
Team Learning Processes: Integrating Perspectives (Range of Scores: 29-42)	Q2	37.63	0%	0%	0%	0%	2%	32%	66%	100%
	Q8	(3.1)	0%	0%	0%	0%	2%	27%	71%	100%
	Q9		0%	0%	2%	0%	22%	49%	27%	100%
	Q21		0%	0%	0%	0%	7%	44%	49%	100%
	Q30		0%	0%	0%	0%	5%	29%	66%	100%
	Q31		2%	5%	2%	5%	32%	41%	12%	100%
Team Learning Conditions: Team Appreciation (Range of Scores: 38-56)	Q4	51	0%	0%	0%	0%	5%	39%	56%	100%
	Q10	(4.4)	0%	0%	0%	2%	10%	44%	44%	100%
	Q16		0%	0%	2%	5%	10%	39%	44%	100%
	Q22		0%	0%	0%	0%	7%	46%	46%	100%
	Q27		0%	0%	0%	5%	10%	41%	44%	100%
	Q32		0%	0%	0%	0%	5%	44%	51%	100%

Components	Items	Mean (SD)	Firmly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Firmly Agree	TOTAL
	Q36		0%	0%	0%	0%	5%	39%	56%	100%
	Q39		0%	0%	0%	5%	2%	39%	54%	100%
Team Learning	Q5	8.9	32%	29%	10%	7%	15%	2%	5%	100%
Conditions:	Q11	(3.57)	44%	24%	15%	2%	7%	5%	2%	100%
Individual	Q17		7%	24%	12%	7%	27%	20%	2%	100%
Expression (Range of Scores: 3-18)										
Team Learning	Q6	28.83	5%	7%	5%	2%	12%	37%	32%	100%
Conditions:	Q12	(4.19)	0%	7%	2%	5%	15%	32%	39%	100%
Operating Principles	Q18		0%	5%	0%	2%	10%	54%	29%	100%
(Range of Scores: 19-35)	Q23		0%	7%	7%	7%	37%	27%	15%	100%
	Q28		0%	0%	0%	0%	5%	39%	56%	100%
<i>N=41</i>										
<i>Items with greater variation were marked in red color.</i>										

and Reframing” (2.58), and the “Team Learning: Experimenting” had the smallest standard deviation (1.64).

**Comparison of individual questions by component.** By scrutinizing the percentage of each response for each item, the researcher identified the items that had generated the greatest variation in responses.

**Team learning outcomes.** Two items in the “Team Learning Outcomes” component presented greater variation in responses. Those items were “the outcomes of our work include new ways of thinking” (item #13), and “the outcomes of our work include new ways of managing” (item #24).

**Team learning processes: framing and reframing.** Two items in the “Team Learning Processes: Framing and Reframing” component presented greater variation in responses. Those items were “we often revise our viewpoints based on input or new information from others outside the group” (item #14), and “we challenge our basic beliefs or assumptions about the issues under discussion” (item #37).

***Team learning processes: integrating perspectives.*** One item in the “Team Learning Processes: Integrating Perspectives” component presented greater variation in responses. The item was “we generally revise our viewpoints based on input or new information from others outside our group” (item #31).

***Team learning conditions: individual expression.*** All three items in the “Team Learning Conditions: Individual Expression” component presented variation in responses. Those items were “members do not have the opportunity to define and develop the group’s objectives” (item #5), “speaking one’s mind is not valued” (item #11), and “people do not feel free to express their negative feelings about changes” (item #17).

***Team learning conditions: operating principles.*** Three items in the “Team Learning Conditions: Operating Principles” component presented greater variation in responses. Those items were “we find that we need to balance getting the task accomplished with building relationships among members” (item #6), “members take sufficient time to get to know each other before working on the task” (item #12), and “we spend much time gaining clarity around our purpose and structure” (item #23).

In summary, the GLS results pinpointed group learning obstacles presented in LPG meetings. First, teachers presented different opinions in terms of whether LPG group leaders managed the LPG meetings differently (e.g., conflict resolution process and task allocation process) as a result of the group work. Second, teachers in LPG meetings experienced different levels of “reframing” toward whether new understandings and viewpoints emerged on the teaching practices they discussed in LPG meetings. Third, teachers in LPG meetings experienced varying degrees of opportunities to offer input, the outcomes of the input, and comfort level to present disagreements. Last, teachers held



contrasting perceptions on whether and how well the LPGs collectively reached consensus on goals, structures, and guidelines in terms of how they worked together as a group.

### **Reflection Questionnaire**

The RQ (Kember et al., 2010) was used to understand the participants' engagement in reflective thinking as a result of the LPG meetings. The questionnaire consisted of 16 questions that measured four levels of reflection: habitual action, understanding, reflection, and critical reflection. An average score was calculated for each participant. All items were measured via a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The researcher asked all participants who were being interviewed and observed to complete the questionnaire. A total of 49 questionnaires were distributed; 43 participants completed the questionnaire. The response rate was 87.8%.

The researcher calculated mean, standard deviation, and the percentage of each response (from strongly disagree to strongly agree) in all 16 items. Means and standard deviations of the scales are presented in Table 14. Means and standard deviations of each item in RQ are presented in Appendix P.

The "Habitual Action" scale had the largest standard deviation (3.1), which indicated that the responses in this scale were more spread out than the other three scales. The second largest standard deviation appeared in the "Critical Reflection" scale (2.6), followed by the "Understanding" scale (2.1), and the "Reflection" had the smallest standard deviation (1.7).

**Table 14***Overview of Means, Standard Deviations and Percentage of Responses in Reflection**Questionnaire*

Scales	Items	Sample (N)	Mean (SD)	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Habitual	Q1	43	8.12	47%	44%	2%	7%	0%	100%
Action (HA)	Q5	43	(3.1)	21%	47%	12%	21%	0%	100%
(Range of	Q9	43		33%	47%	7%	7%	7%	100%
Scores: 4-16)	Q13	43		33%	47%	12%	7%	2%	100%
Understanding	Q2	43	17	0%	5%	5%	44%	47%	100%
(U)	Q6	43	(2.1)	0%	0%	7%	47%	47%	100%
(Range of	Q10	43		0%	0%	0%	58%	42%	100%
Scores: 13-20)	Q14	43		0%	5%	7%	40%	49%	100%
Reflection (R)	Q3	43	18	0%	2%	7%	56%	35%	100%
(Range of	Q7	43	(1.7)	0%	2%	0%	49%	49%	100%
Scores: 14-20)	Q11	43		0%	0%	0%	40%	60%	100%
	Q15	43		0%	0%	0%	37%	63%	100%
Critical	Q4	43	15	0%	12%	16%	56%	16%	100%
Reflection	Q8	43	(2.6)	0%	7%	16%	51%	26%	100%
(CR)	Q12	43		0%	0%	12%	49%	40%	100%
(Range of	Q16	43		9%	12%	30%	37%	12%	100%
Scores: 9-20)									

N=43

Items with greater variation were marked in red color.

**Comparison of individual questions by scale.** By scrutinizing the percentage of each response for each item, the researcher identified the items had generated the greatest variation in responses.

**Habitual action.** Three items in the “Habitual Action” scale presented greater variation in responses. Those items were “in LPG, we do things so many times that I started doing them without thinking about it” (item #5), “the work of this LPG doesn’t require me to learn something new or think too much to accomplish the tasks in this group” (item #9), and “if I follow what the leader says, I do not have to think too much on this LPG” (item #13).

**Understanding.** Two items in the “Understanding” scale presented greater variation in responses. Those items were “this LPG requires me to understand concepts

taught by the leaders” (item #2), and “in this LPG, I have to continually think about the material that is being presented by the leader” (item #14).

***Reflection.*** One item in the “Reflection” scale presented variation in greater responses. The item was “I sometimes question the way others do something and try to think of a better way” (item #3).

***Critical reflection.*** Three items in the “Critical Reflection” scale presented variation in greater responses. Those items were “as a result of this LPG I have changed the way I look at myself” (item #4), “as a result of this LPG I have changed my normal way of doing things” (item #12), and “From this LPG, I discovered faults in what I had previously believed to be right” (item #16).

In summary, the RQ results examined the level of reflection teachers engaged during LPG meetings. First, teachers reported conflicting viewpoints on whether they perceived the LPG meetings as frequent events and whether they needed to engage in much conscious thinking when completing tasks. Second, teachers displayed different beliefs on whether LPG group leaders presented concepts or materials that required teachers to comprehend. Third, teachers held contrasting perceptions of whether they questioned or considered improvements related to alternative ways on other teachers’ teaching practices discussed in LPG meetings. Last, teachers revealed opposing opinions on whether the outcomes of LPG meetings changed their self-perception, their teaching practices, or their long-held beliefs.

## **Findings From Observations**

The researcher observed 10 LPG meetings and two other school-based learning and research activities. The researcher depicted the following hypothetical scenarios based on her field observation notes to offer additional contextual perceptions. A series of thumbnail sketches is included in Appendix Q.

### **Hypothetical Scenarios of LPG Meetings**

The LPG meeting took place in several locations, depending on LPG group leaders' decision. These locations included a meeting room with centered round table, teacher's office, student's classroom, or science lab. After the LPG meeting started, the LPG group leaders presented announcements about upcoming exam details, students' academic related events, and teachers' teaching and research related events. The LPG group leaders also summarized recent past teaching and research related events. Then, the group leader of LPG would lead a discussion to unify teaching progress, content and other relevant tasks involved for the upcoming week's teaching. Teachers gave input when LPG group leaders asked. In the event where the central speakers were used to introduce how they would approach the upcoming week's lesson, the central speaker would start their presentation with a question and answer session. They also discussed and unified teaching content and teaching progress. Some teachers graded students' homework during LPG meetings, some came to meetings without pens or notebooks, and others texted on their cell phones.

### **Hypothetical Scenario of Open Lesson Debrief Session**

The open lesson debrief session took place in the teacher's office. The LPG group leaders asked the veteran teachers to share the strengths of the open lesson. The veteran teacher offered positive feedback on the lesson. The LPG group leaders described another open lesson they attended at a different school and shared what they believed they could possibly adopt. Subsequently, the group leader of LPG asked about the current teaching progress and difficulties. The group also discussed students' homework and key points within a lesson. The LPG group leaders declared the focus of upcoming week's lesson.

### **Chapter Summary**

In this chapter, the researcher presented nine findings uncovered from this study that involve similarities and differences across both schools. Findings were organized according to the research questions.

In research category #1, the researcher uncovered four findings that discussed school leaders' perspective on the significance of reflection in LPG meetings, and its assessment methods, including two findings on the similarities and two findings on the differences across both schools. In research category #2, the researcher identified four findings that examined the LPG group leaders' preparation and facilitation of LPG meetings, including two findings on the similarities and two findings on the differences across both schools. In research category #3, the research described one finding that illustrated the teachers' experience of reflection in LPG meetings. Additionally, the researcher reported three emergent findings. Table 15 contains a summary of all nine findings.

**Table 15***Findings Summary*

Research Category	Similarities Across Both Schools	Differences Across Both Schools
#1. Significance and assessment of reflection and reflective practice	<p><b>Finding #1. Goals of LPGs:</b> There were multiple goals cited by the school leaders, but one common goal cited by all school leaders was planning and unifying teaching progress and content. Other goals included share teaching strategies, differentiating teaching instructions, and determining students' homework.</p>	<p><b>Finding #3. Training for LPG group leaders:</b> Training varied in terms of opportunities and resources provided to the school. School 1 did not provide any formal training to group leaders, whereas School 2 offered training primarily related to the new college entrance exam in China (<i>xingao kao</i>). Neither school trained teachers in the skills needed to manage and facilitate LPG meetings.</p>
	<p><b>Finding #2. Expected reflection moments:</b> School leaders expected teachers to engage in reflection through three means. These included reflection during weekly LPG meetings, reflection during open lesson debrief sessions, and individual written reflection in the teaching plan booklet.</p>	<p><b>Finding #4. Assessment plans of reflection:</b> School 1 did not have any assessment plans toward reflection. Although several assessment plans toward reflection existed in School 2, those methods only assessed individual level reflection (e.g., individual semester reflection report).</p>
#2. LPG group leaders' preparation and facilitation of LPG meetings	<p><b>Finding #5. Meeting preparation:</b> All LPG group leaders prepared the meeting by previewing the upcoming week's teaching content and teaching progress. Some other tasks cited by the LPG group leaders were identifying the upcoming week's teaching difficulties and students' homework. When LPG used a central speaker to lead partial discussions in the meetings, the LPG group leaders also coordinated with the central speaker to confirm the topic.</p>	<p><b>Finding #6. Discussion format and content:</b> LPG meetings' discussion format and content varied based on whether the LPG group leaders assigned a central speaker among teachers and whether the central speakers made adequate preparation.</p>
	<p><b>Finding #7. Discussion challenges from teachers' perspectives:</b> Group meeting discussion challenges included the</p>	<p><b>Finding #8. Facilitation challenges from LPG group leaders' perspectives:</b> LPG group leaders facilitation challenges varied in terms of teachers'</p>

Research Category	Similarities Across Both Schools	Differences Across Both Schools
	lack of advance preparation on the discussion topic and the lack of in-depth discussions in the LPG meetings.	attitudes toward group collaboration and their willingness to share teaching practices with others. Younger LPG group leaders presented difficulties in solving such facilitation challenges.
#3. Teachers' experience of reflection in LPG meetings	<b>Finding #9. Reflection in LPG meetings:</b> Teachers reported that they engaged in reflection on occasion, like post-exam analysis and open lesson debrief sessions. Group leaders did not lead discussions that encourage reflection as a routine in LPG meetings.	

## Chapter V

### ANALYSIS OF FINDINGS

This exploratory qualitative case study sought to inform the practice of Lesson Preparation Groups (LPGs, *beikezu*) to improve facilitating reflective practice through LPG meetings (*beike zuhui*) in Chinese public high schools. The purpose of this study was to discover how a sample of LPG group leaders (*beike zuzhang*) facilitated the LPG meetings and to shed light on the current state of reflective practice in a sample of LPG meetings.

The overarching research question was: What are the perceptions of reflective practice for LPG meetings among the school leaders, LPG group leaders and teachers?

The other research questions that guided this study were:

1. How, if at all, do school leaders value and evaluate reflective practice in LPG meetings?
2. How do LPG group leaders prepare and facilitate LPG meetings with teachers?
3. How do teachers experience the actions of LPG group leaders in facilitating reflective practice in their LPG meetings? Do they report reflecting critically on their work as a result of their reflective practice in LPG meetings and, if so, what helped them to do so?



Among the 11 groups studied in the dissertation, the researcher identified two qualitative groups that were differentiated by the group size in each group. The groups were “6 people or fewer” and “over 6 people.”

In this chapter, the researcher presents the analysis and possible explanations of the findings.

## Analysis

### Participant Groups

The researcher believed that group dynamics and outcomes would be very different with larger group sizes; thus, she categorized groups into two qualitatively different groups based upon the group size. Of the 11 groups, five groups were categorized in the “6 people or fewer” group, and six groups were categorized in the “over 6 people” group.

Table 16 displays the demographic for both participant groups.

**Table 16**

#### *Demographic Information in Participant Groups*

Participant Groups	Group Codes	Group Size	Group Leaders' Gender	Group Leaders' Age Ranges
6 people or fewer	G5.S1	3 people	Female	>50
	G6.S1	5 people	Female	40-44
	G7.S1	3 people	Male	>50
	G8.S1	6 people	Female	35-39
	G11.S2	4 people	Female	30-34
Over 6 people	G1.S1	7 people	Male	35-39
	G2.S1	10 people	Male	35-39
	G3.S1	7 people	Female	40-44
	G4.S1	9 people	Female	35-39
	G9.S2	19 people	Female	30-34
	G10.S2	11 people	Female	30-34

## **Analysis I. School Leaders' Perceptions and Values of School-Wide Reflective Practice and Teachers' Group Learning**

*School leaders affirmed that the LPG meetings play an indispensable role in engaging reflective discussions and shaping a school-wide reflective practice community, but numerous discrepancies existed between school leaders' expectations and groups' actual practices.*

The first research question sought to explore the school leaders' opinions on various aspects of teachers' group learning and reflective practice in LPGs. All school leaders shared their understanding of the significance of reflective practice in LPGs, the current support mechanism, and the evaluation criteria of LPG's work. Based on the findings, three major discrepancies appeared between school leaders' expectations and groups' actual practices. Table 17 displays the summary of guidelines in each school. The sections that follow present an analysis of how the actual practices differed from the guidelines.

**Inconsistencies in the meeting duration.** The first discrepancy was related to the meeting duration. The researcher discovered this discrepancy from comparing findings from school leaders' interviews and the researcher's field observation of the LPG meetings. The principal from School #1 claimed that the LPG meetings would last for at least 40 minutes (equal to one class period), and the vice principal from School #2 claimed the LPG meetings would last for 80 minutes (equal to two class periods). Regardless of participant groups, all groups in School #2 did not meet the expected meeting duration (80 minutes), whereas most groups in School #1 were close to meet the expected meeting duration (40 minutes). This inconsistency may be due to a lack of perceived benefits by attending the meetings.

**Table 17***Summary of Guidelines*

Guidelines	School #1	School #2
Expected meeting duration	40 minutes per week	80 minutes per week
Tasks of LPGs	<ul style="list-style-type: none"> <li>• Plan the entire year's progress with the teaching progress of each semester, serving as basic elements.</li> <li>• Teaching research</li> <li>• Prepare exam papers</li> <li>• Task allocation and coordination</li> </ul>	<ul style="list-style-type: none"> <li>• One lesson, three preparations: preparation using the textbook, preparation of the students, and preparation of the teaching methods</li> <li>• Differentiated instruction and interventions</li> <li>• Preparation for learning progress</li> <li>• Selection of exercise questions</li> <li>• Integrated moral education</li> <li>• Organize reasonable task allocation and close cooperation between the group members.</li> <li>• Central speakers should come to the group meeting well-prepared. The order to be followed is the central speaker, comments from others, then group discussion.</li> </ul>
Reflection moments	<ul style="list-style-type: none"> <li>• Teaching plan booklet</li> <li>• Post-exam group report</li> </ul>	<ul style="list-style-type: none"> <li>• One lesson, three preparations</li> <li>• Teaching plan booklet</li> <li>• End semester reflection report</li> <li>• Research paper</li> </ul>

Among the 10 groups that the researcher observed, the average meeting duration was about 30 minutes in School #1 and 23 minutes in School #2. As the researcher had a small sample size in School #2, the researcher was unclear about how long the meeting usually lasted for other groups. Although the observation data did not represent the holistic picture of the reality in both schools, the sample studied in this dissertation did not meet the expectations described by the school leaders. Table 18 displays the actual meeting duration based on field observations.

**Table 18***Group Variations in Meeting Duration*

Groups	Expected Meeting Duration	Actual Meeting Duration
G1.S1	40 minutes	30 minutes
G2.S1		30 minutes
G3.S1		30 minutes
G4.S1		<i>did not observe</i>
G5.S1		40 minutes
G6.S1		40 minutes
G7.S1		30 minutes
G8.S1		47 minutes
G9.S2	80 minutes	25 minutes
G10.S2		20 minutes
G11.S2		25 minutes

**Inconsistencies in the LPG meetings’ tasks.** The second discrepancy was between schools’ expectations of the tasks during the LPG meetings and actual tasks that the groups had been doing. According to the school leaders, groups in both schools were expected to engage in meaningful discussions that guide teachers to reflect deeply on their teaching practices in classrooms. They expected teachers to make the breakthrough of their challenges through collective efforts. Nonetheless, all groups (100%) mentioned that they focused on discussing the upcoming week’s teaching content and unifying teaching progress. One essential task that seemed to be overlooked was “teaching practices” and “teaching and research.” This discrepancy could be attributed to the fact that the meeting duration did not provide sufficient time for the groups to cover both “teaching tasks” and “teaching research.” All groups spent considerable time discussing the teaching progress and upcoming week’s teaching content. Especially in the groups in group size “over 6 people,” it was not realistic for them to unfold discussions related to the teaching and research topics.

A few teachers perceived the group meeting as an administrative task, rather than a collaborative opportunity with colleagues. For example, the researcher noticed several common behaviors from the field observations at schools. Some teachers were doing nonmeeting tasks in the LPG meetings, such as grading homework, grading exams, chatting on instant messaging apps, etc. These behaviors might have jeopardized the group dynamics to carry out purposeful discussions. In addition, at School #2, administrative staff would visit each group meeting and take attendance to ensure the meetings were being held at their designated locations. In one group with over six people, the researcher noticed that some teachers left the meeting after the administrative staff took the attendance. The researcher later confirmed the normality of this behavior. The group leader said this was a recurrent behavior, and she had little control over it. She further elaborated said:

We were about to start the group meeting, so we went to the classroom 501, but they did not even want to sit down. After they came in, they said they felt there's not much to talk about, as they just had another meeting next door. . . so basically people were not willing to sit down and discussion, they did not want to sit down, they felt it's a waste of time, they needed to go home, or correct students' homework, or read student's essays. (GL10.S2) 我们该开备课组会了, 然后我们就去隔壁 501 教室, 然后去他们就连坐都不坐下。他们直接进来之后说, 好像今天是不是没什么, 因为在这边已经开过一次开过的会了, 然后到那边他们就说今天是不是没什么事, 然后连坐都没坐下. . . 反正整个就是说大家不愿意坐下来谈, 他们不愿意坐下来谈, 就觉得浪费时间, 他们还要回家, 或者是还要干嘛, 改作业, 还要改作业题, 他说还两套作业, 还有两套作文, 就是这样子。

This evidence led the researcher to believe that some teachers considered attending the LPG meetings were not worth their time, especially compared with other tasks they needed to complete. They rushed to go back to their work rather than being fully present at the meetings. On the other hand, when the LPG meetings were

significantly shorter than the expected meeting duration, the content and quality of meetings were also affected.

**Inconsistencies in the reflection moments.** In both schools, teachers were expected to record their reflective thought on their teaching plan booklet. There was a designated section in each teaching plan booklet that provided space for teachers to reflect. However, when the researcher asked the participants to describe the reflection opportunities, the findings revealed that only four participants mentioned they used a teaching plan booklet as a means to reflect. In School #2, the school leaders also indicated the other three reflection moments, but the participants recognized none of them in the interviews. This discrepancy could be attributed to the misalignment in the communication from the top-down approach. Table 19 displays expected reflection moments from the school leaders and actual reflection moments mentioned by the groups.

**Table 19**

*Expected Reflection Moments vs. Mentioned Reflection Moments*

Reflection Moments	Mentioned by the School Leaders from School #1	Mentioned by the Groups from School #1 (N=8)	Mentioned by the School Leaders from School #2	Mentioned by the Groups from School #2 (N=3)
Self-dependent		37.5%		100%
Open lesson debriefs		37.5%		66.67%
Open lesson observations		37.5%		33.33%
Post-exam	X	50%		33.33%
Teaching plan booklet	X	25%	X	33.33%
Semester reflection report			X	
Research paper			X	
Students' evaluation			X	

As shown in Table 19, recording one's reflection in the teaching plan booklet was a designated space for reflection in both schools. However, it was the least recognized in

both schools. It seemed possible that this result was due to an inadequate support system in evaluating the quality of reflection, above all, the current absence of evaluation methods on reflection on the school level in both schools.

## **Analysis II. LPG Group Leaders' Preparation and Facilitation of the LPG Meetings**

*The LPG group leaders' design and facilitation were influenced by their understanding of the role and their perceptions of group members' willingness and interests to collaborate.*

The second research question sought to discover how the LPG group leaders designed and facilitated the LPG meetings in general. All LPG group leaders described how they usually prepared for the meetings and what they would discuss during the meetings. The researcher identified two influential factors related to the design and facilitation approaches among LPG group leaders. While there was wide agreement across the meeting content, groups with 6 people or fewer and groups with over 6 people differed by the perceptions that the LPG group leaders' held on their role and the collaborative willingness and interests from their respective group members.

**Influenced by the understanding of the role.** Through the interviews, LPG group leaders shared their understandings of the role when giving examples about the challenges they faced. Regardless of the group size, a considerable number of LPG group leaders disclosed that they did not see themselves as leaders of groups, or they did not feel they had the power to influence group members in completing group tasks. Some LPG group leaders used the word "coordinator" when they talked about their understanding of the role. Moreover, several LPG group leaders expressed that they felt other group members also did not perceive them as a leader, and a couple of group members confirmed the LPG group leaders' assumptions during the interviews. These

understandings would significantly influence the ways the LPG group leaders designed and facilitated the meetings and their confidence in working together with the group members.

The above evidence led the researcher to believe that the LPG group leaders were not certain about the boundaries of the role. They did not construct a leader identity, especially a facilitator identity. Table 20 illustrates how LPG group leaders understood their role and how group members perceived the role of a group leader. For a bilingual version of the table, please refer to Appendix R.

Under the groups in group size 6 people or fewer, two LPG group leaders expressed feelings toward being in the group leader role. One group leader admitted powerless feelings, which led her to believe the group leader role was a difficult position to assume (GL8.S1). Another group leader discussed how she did not position herself as the leader. She further speculated the reasons behind why she was chosen, especially she claimed that it was her first time serving the role without any relevant experience. Her assumptions led her to believe that she was chosen because she was not quite busy, and she had more free time compared with other teachers. These two LPG group leaders' feelings might be due to the fact that they tend to be the younger teachers in the group; when they were assigned to the role, they were not equipped with the skills they needed to manage the group. They learned about their responsibilities informally through experience or dialogue with former or current LPG group leaders. Two LPG group leaders who were both above 50 years of age did not mention about their perceptions or feelings of serving the role (GL5.S1, GL7.S1). This may have been because they were less likely to experience power issues as the younger teachers experienced. They were



considered as veteran teachers in their school, and they had more confidence in doing the work due to their seniority and years of experience.

In group size “over 6 people,” two LPG group leaders described their perceived role of being the “coordinator” instead of being the “leader” of the group (GL1.S1, GL4.S1), and one group leader said she felt she was not at the level to confront conflicts when they arose (GL10.S2). Two teachers agreed with these perceptions (G1T1.S1, G2T1.S1). Taking this into account, the researcher believes that these LPG group leaders presented ambiguous understandings of how the position was defined. One group leader emphasized her unwillingness to take the role in the first place, but she had no other choices (GL3.S1). She needed to maintain her relationship with her superior by taking the role as a favor. Another group leader highlighted that he deemed LPG meetings as an administrative task where teachers gathered together to hold this administrative meeting with pictures taken to demonstrate the meetings were held, and discussions were conducted.

**Influenced by perceived willingness and interests to collaborate.** The LPG group leaders’ design and facilitation were also influenced by how they perceived the group members’ willingness and interests to collaborate. In School #1, school leaders discussed the expected task allocation of the groups, but in actual practices, three groups did not follow this expectation, and these groups had over six people. However, in School #2, as the central speaker’s role at each group meeting was to co-create and share the course materials with the group members, the task allocation was embedded in the culture. Table 21 displays group variation in task allocation.

**Table 20***Quotations of Perceived LPG Group Leaders' Role*

Participant Groups	Groups	Group Leaders' Age Ranges	Quotations
6 people or fewer	G5.S1	>50	<i>Did not mention</i>
	G6.S1	40-44	The group leaders have a modest attitude, and (the teachers) also respect these teachers with more experience. (GL6.S1)
	G7.S1	>50	<i>Did not mention</i>
	G8.S1	35-39	Actually, I think group leader is a difficult position to assume. Firstly, you don't have effective means to discipline the team members, however at the same time, you would also like to have everyone following the rules. I think it's hard. (GL8.S1)
	G11.S2	30-34	I myself don't have a ton of experience. It's the first time I'm holding this position. On top of that, it's Grade 12. So, I didn't position myself or others didn't position me as the leader. It may very well be that they're quite busy while I have some time, so I became the group leader to take care of some miscellaneous tasks. (GL11.S2)
Over 6 people	G1.S1	35-39	I think I've been assuming the role of a coordinator. So rather than leading the group and having everyone following my ideas, everyone contributes their ideas. Most of the time, I think my ideas work pretty well together with other teachers' ideas. I'll then be more confident in carrying out the tasks that follow. (GL1.S1) The group leader is not necessarily the smartest one or the one best at leading others. Sometimes it's just a role that falls upon the most willing, or because a person is younger, more energetic and more willing to take the responsibilities. (G1T1.S1)
	G2.S1	35-39	The LPG meeting is a bit similar to an administrative meeting. . . where the school has assigned a task formally to be completed at a location, with pictures taken. (GL2.S1) The group leaders actually do not have a lot of authority. (G2T1.S1)
	G3.S1	40-44	The leader would say, you'll help me, right? That's it. When I'm asked to do this by a leader, they'd always say you need to help me. You don't have another option, right? So, it has to be done. On the one hand, you're maintaining your relationship with the leader, on the other hand, there are realistic issues at stake, right? So, you can't say no. (GL3.S1)
	G4.S1	35-39	You can say that a group leader of LPG does not count as a real leader. They simply lead everyone to achieve a goal – National College Entrance Exam. In high school, you can't set an alternative goal by yourself. The goal is clear - you need to find ways to improve the Chinese scores of this grade. (GL4.S1)
	G9.S2	45-49	<i>Did not mention</i>

Participant Groups	Groups	Group Leaders' Age Ranges	Quotations
	G10.S2	30-34	I'm not yet at that level, where I can talk to them and ask them to do something. Everyone assumes their roles on the surface. (GL10.S2) I'm not yet on that level, and then for authoritative people, there aren't any teachers with a ton of experience in our school. On the other hand, teachers with a lot of experience would prefer not to be in charge. (GL10.S2)

**Table 21***Group Variation in Task Allocation*

Participant Groups	Group Leaders	Group Leader's Age Ranges	Task Allocation
6 people or less	GL5.S1	>50	Task allocation existed
	G1L6.S1	40-44	Task allocation existed. Voluntarily took on tasks.
	GL7.S1	>50	Task allocation
	GL8.S1	35-39	Task allocation
	GL11.S2	30-34	The school required task allocation, but the task completion rate was low.
Over 6 people	GL1.S1	35-39	No task allocation
	GL2.S1	35-39	No task allocation
	GL3.S1	40-44	No task allocation. Group members were unwilling to do the tasks, and they assumed the group leader would complete whatever tasks needed to be done.
	GL4.S1	35-39	<i>Did not mention</i>
	GL9.S2	45-49	The school required task allocation.
	GL10.S2	30-34	The school required task allocation, but the work quality was low.

In group size 6 people or fewer, all groups reported that they allocated tasks among group members (G5.S1, G6.S1, G7.S1, G8.S1, G11.S2). In contrast, in group size “over 6 people,” three groups in School #1 reported no task allocation existed (G1.S1, G2.S1, G3.S1), and two groups in School #2 affirmed the existence of task allocation mandated by the school (G9.S2, G10.S2). In particular, one LPG group leader in group size “over 6 people” complained about the challenges of task allocation in her group, and

she further asserted the reasons were rooted in the school culture, as there was a lack of collaborative school culture in general (GL3.S1).

The above evidence led the researcher to believe that some LPG group leaders might be hesitant to propose task allocation in their groups for the sake of group harmony. In large groups with over six people, the complexity increases in allocating tasks, especially allocating in fairly ways. The complexity involved might also trigger interpersonal conflicts that the LPG group leaders might not feel capable of confronting such conflicts. Considering these potential complications, some LPG group leaders might rather bear the tasks by themselves.

Although School #2 mandated task allocation in LPGs, two groups from School #2 pointed out the inconsistent work completion and work quality delivered from the group members (GL10.S2, GL11.S2). In particular, one group leader said that she did not see the course materials shared in the group were being used in the classrooms; she disclosed that some course materials were not teachers' original work, but rather downloaded directly from the internet (GL10.S2). In addition, she complained about several issues regarding group collaboration. First, group members rushed to leave the meeting after the administrative staff member came to take attendance. Second, after the group leader proposed the discussion topics, teachers showed little patience to dive deeper into the discussions. They urged to end the meeting as quickly as possible so they could return to their work. A possible explanation for these might be because group members did not experience direct benefits in participating in the discussion or delivering high-quality work; thus, they did not feel obligated to invest their time.

### **Analysis III. Teachers' Attitudes and Engagement Toward Reflection in LPG**

#### **Meetings**

*Most groups adopted the role of the central speaker with various functions during LPG meetings. LPG group leaders did not take action to encourage reflection in LPG meetings.*

The third research question sought to explore teachers' experience of reflection and reflective practice by the actions of their group leader's facilitation in the LPG meetings. Both schools encouraged LPGs to use a central speaker at each meeting. Most groups adopted the role of a central speaker to hold the meetings, but their approaches differed in actual practices. The researcher discovered that the role of a central speaker and the discussion content influenced not only the reflection opportunities in meetings but also the types of reflection that occurred. When the central speaker was adopted, the common purposes included sharing practices (primarily in School #1) and sharing prepared course materials (primarily in School #2).

In group size 6 people or fewer, participants from two groups said that the group discussions did not provide opportunities for reflective thinking (G8.S1, G11.S2). When reflection did happen, it mostly occurred after the exam (G5.S1, G6.S1). After each exam, the LPG group leaders would prepare a post-exam analysis session where teachers analyze students' performance on each question. The exams usually occurred every month.

In group size "over 6 people," although when the researcher asked the teachers when reflection would be engaged in the meetings, some participants mentioned open lesson debrief sessions, post exam analysis or students' problems' discussions, they highlighted that the discussions were not centered to be reflective, and reflection was rather a personal preference or habit (G1.S1, G3.S1, G4.S1, G9.S2, G10.S2).

Participants from six groups said reflection was primarily self-dependent. There are several possible explanations for the absence of reflective discussions in meetings. First, as there were no on-boarding or on-the-job training provided for LPG group leaders at either school, LPG group leaders did not have the tools to be successful on the job. In particular, there were no discussion protocols used to provide opportunities for different types of reflection. Second, LPG group leaders might hold vague understandings about the purposes of LPG meetings. If the expectations from the school level were not clearly communicated to the LPG group leaders, they were less likely to meet the expectations. Third, the LPG group leaders and teachers might be unclear about what reflection is and how reflection could be engaged during the LPG meetings.

On the contrary, one group leader noted during the interview that the central speaker was “enlisted to show the school.” In other words, the purpose of utilizing this role in the meeting seemed unclear to this group leader. Similarly, a teacher from a different group mentioned that “reflection is not the essential task during the meeting.” It is possible that the discrepancy was due to the ambiguous understanding of the purpose of using this role when it was introduced in the first place.

In sum, reflection and dialogue among teachers occurred more in open lesson debrief sessions and post-exam analysis. Table 22 displays group variation in their approach to the central speaker’s role concerning the reflection in meetings. For a bilingual version of the table, please refer to Appendix S.

**Table 22***Group Variations in Approach to Central Speaker's Role and Reflection in Meetings*

Participant Groups	Groups	Group Leader's Age Range	When did reflection happen	Central Speaker's Role	Sample Excerpt(s) about Reflection in Meetings
6 people or less	G5.S1	>50	Post-exam analysis	Share practices	We hold (a LPG meeting) every week. Usually, more than 10 minutes will be spent reflecting our own issues in teaching. (G5T2.S1)
	G6.S1	40-44	Post-exam analysis	Share practices	<i>Did not mention</i>
	G7.S1	>50	When they discussed teaching problems	<i>Did not mention</i>	We would discuss the problems we encountered in the classroom, this is a type of reflection – this is what I encountered, why this problem happened, why this problem did not occur in your class. (G7T1.S1)
	G8.S1	35-39	The discussion topics did not encourage reflection	Enlisted to show the school	Telling the truth is usually rare (reflection at the LPG meeting). I think the issues have to do with the energy level of each teacher, their enthusiasm, the allocation of time, and the various difficulties faced by each individual. I think it depends on how we spend efforts promoting it or working on the culture and rules. (G8T1.S1)
	G11.S2	30-34	The discussion topics did not encourage reflection	Share prepared course materials	Teaching reflection is probably mainly done privately by each individual. It is rarely discussed. (G8T2.S1) This reflection is basically absent on the general meeting level; it's more at the individual level. Some people have a good habit of reflection, and they grow faster. Engaging in reflection is a personal preference, nothing more than that. (G11T1.S2)
Over 6 people	G1.S1	35-39	Open lesson debrief sessions	<i>Didn't mention</i>	This reflection rarely happens on the society level. It depends more on the individuals. Some people have better habits and develop faster. Reflection is only a personal habit. (G11T2.S2) Regarding the teaching methods and events, there's basically no reflection, mostly self-directed. (G1T1.S1)
	G2.S1	35-39	<i>Did not mention</i>	Share practices	<i>Did not mention</i>
	G3.S1	40-44	Discuss students' problems	Share practices	For example, a teacher may propose that the students face certain issues in certain areas, or that there is insufficient implementation in certain areas. Everyone will then discuss it

Participant Groups	Groups	Group Leader's Age Range	When did reflection happen	Central Speaker's Role	Sample Excerpt(s) about Reflection in Meetings
	G4.S1	35-39	Post exam analysis	Share practices	together and amend the issues later. This happens but does not represent the mainstream. (G3T1.S1) We normally rarely (reflect during the LPG meetings). (G4T2.S1)
	G9.S2	45-49	Veteran teachers shared their past experiences	Share prepared course materials	What happens more often is probably individuals reflecting on their own, rather than reflecting on themselves at the meetings. (G9T1.S2)
	G10.S2	30-34	Open lesson debrief sessions; post-exam analysis	Share prepared course materials	Individual reflections on oneself would be more common. However, group reflection at LPG meetings does happen, usually after an exam, particularly after monthly exams, mid-term exams and end-of-the-term exams. (G10T2.S2)

When group members discussed teaching practices during LPG meetings, they primarily engaged in content reflection. According to the observation field notes, the researcher noticed that most groups discussed “what” the teaching difficulties were and “what” they would teach in the upcoming week. Multiple participants shared that they did not frequently discuss and reflect on the teaching methods, especially make breakthroughs on specific teaching difficulties. One group leader shared that most times, they discussed “what” to do, but “how” to do would be better; the actual strategies, were not effectively communicated. Another participant said they would spend about 10 minutes discussing what the teaching difficulties were from the previous week. Considering the time invested in discussing the teaching difficulties, the researcher believes that reflection happened primarily on the content level.

When participants shared prepared course materials by selected group members during meetings, the engagement of reflection depended on the nature of the events. One group leader claimed that reflection did not happen during the meetings, although she



made efforts to create opportunities for it. Other participants reported reflection that happened during post-exam analysis and open lesson debriefs.

Furthermore, in the RQ, the greatest variation was shown in the questions that examined whether the LPG meetings had become an activity they “performed automatically or with little conscious thought” (Kember et al., 2000, p. 383). The researcher found that whether the LPG meetings had become habitual to the participants varied from group-to-group; while some participants believed they needed to think while attending the meetings and completing the tasks, others believed it did not require much thinking.

### **Chapter Summary**

The researcher identified two qualitative groups to interpret the findings: group size of 6 people or fewer and group size of over 6 people. In relation to the analytic categories, these qualitative groups differed in school leaders’ perceptions and values of school-wide reflection and group learning, the LPG group leaders’ preparation and facilitation of LPG meetings, and teachers’ attitudes and engagement toward reflection in LPG meetings. First, three major inconsistencies were analyzed in terms of school leaders’ expectations and groups’ actual practices. These inconsistencies involved meeting duration, LPG meetings’ tasks, and the reflection moments. Second, two influential factors were identified in terms of LPG group leaders’ preparation and facilitation of LPG meetings. LPG group leaders’ approaches were influenced by their understanding of the role, and their perceptions of fellow teachers’ willingness and

interest to collaborate. Last, teachers' attitudes and engagement toward reflection depended on the LPG group leaders' actions in LPG meetings.

The researcher embarked on this study knowing of no academic literature on the study of LPG group leaders' facilitation of LPG meetings and teachers' experiences of reflective discussions in LPG meetings. The available literature on TRGs and LPGs was limited to collaborative challenges in these groups (Gong, 2015; Lee, 2004; Paine & Ma, 1993; Qiao & Yu, 2016; Wong & Tsui, 2007; Yuan & Zhang, 2016). The existing literature did not address LPG group leaders' actions in facilitating reflective practice in LPG meetings. There was also literature available on comparison of characteristics and practices of TRGs in China and PLCs in western countries. Contributing to this literature gap, the triangulation of various sources of data (interviews, observations, and surveys) affirmed and extended what was already known about the functions of LPGs (Hu, 2013), the purpose of LPGs (Lai, 2010; Yuan & Zhang, 2016), and the collaborative challenges in teacher groups (Gong, 2016; Guo, 2017; Paine & Ma, 1993; Qiao & Yu, 2016; Yuan & Zhang, 2016; Zhang, 2017; Zhou, 2014). The study also built understanding of possible gaps in the literature, such as the how LPG group leaders actually perform in their roles (prepare and facilitate the LPG meetings), the facilitation challenges from LPG group leaders' perspectives, and the best practices in facilitating LPG meetings that encourage reflection.

## Chapter VI

### DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

This exploratory qualitative case study sought to inform the practice of lesson preparation groups (LPGs, *beikezu*) to improve facilitating reflective practice through LPG meetings (*beike zuhui*) in Chinese public high schools. The purpose of this study was to discover how a sample of LPG group leaders (*beike zuzhang*) facilitated the LPG meetings and to shed light on the current state of reflective practice in a sample of LPG meetings.

The researcher uncovered nine findings that show similarities and differences across both schools in answering the research questions. The overarching research question was: What are the perceptions of reflective practice for LPG meetings among the school leaders, LPG group leaders and teachers? The other research questions that guided this study were:

1. How, if at all, do school leaders value and evaluate reflective practice in LPG meetings?
2. How do LPG group leaders prepare and facilitate LPG meetings with teachers?

3. How do teachers experience the actions of LPG group leaders in facilitating reflective practice in their LPG meetings? Do they report reflecting critically on their work as a result of their reflective practice in LPG meetings and, if so, what helped them to do so?

For Research Question #1, the researcher sought to understand school leaders' expectations of LPG meetings, the LPG's role in developing a reflective practice school community, and relevant assessment methods. School leaders asserted they expected teachers to have reflective conversations and work collaboratively in weekly LPG meetings. However, the one common agreed goal among LPG group leaders was planning and unifying teaching progress and content. To achieve this goal, teachers may not need to engage reflection in LPG meetings. It is not surprising the LPG did not engage in reflective discussions. Besides engaged reflection in LPGs meetings, school leaders also expected teachers to reflect their teaching practices in other ways, such as in teaching plan booklets and open lesson debrief sessions. Although school leaders expected LPG group leaders to facilitate reflective conversations in LPG meetings, there were not related skill-based trainings provided to these LPG group leaders to better facilitate such conversations. The lack of assessment plans toward reflection and group learning in LPG revealed that there were no formal protocols to evaluate progress and group performance.

For Research Question #2, the researcher sought to discover ways LPG group leaders prepared and facilitated LPG meetings and influential factors that affected the dynamics of the LPG meetings. The findings revealed LPG group leaders perceived the primary goals of the LPG meetings were to plan teaching content, unify teaching

progress, and discuss teaching pedagogies. These goals echoed some of school leaders' expectations. When LPG group leaders facilitated discussions in LPG meetings, they encountered challenges, such as teachers being unprepared to discuss planned topics, which resulted in a lack of in-depth discussions. Teachers' attitudes toward group collaboration and their willingness to share practices also influenced LPG group leaders' facilitation.

For Research Question #3, the researcher sought to uncover teachers' experiences of engaging reflection in LPG meetings and opportunities that encouraged them to reflect on their teaching practices. Teachers reported LPG group leaders did not lead discussions that encouraged reflection in day-to-day LPG meetings, except occasions such as post exam analysis or lesson debrief sessions.

In Appendix T, the researcher presented a consistency chart where ensured the alignment among findings, interpretation, conclusions, and implications. In the next section, the researcher discusses and interprets the most significant findings.

## **Interpretative Discussion**

### **Reflection Inside Lesson Preparation Group Meetings**

Teachers reported the most reflective discussions occurred primarily in post exam analysis and open lesson debrief sessions. The researcher analyzed these two types of meetings based on teachers' responses to the reasons why these events provided opportunities for reflection. The researcher discovered these two events shared four elements that invited reflective discussions.

The first element was the use of student data. In both events, teachers were asked to use student data as evidence to support discussions they had. The data could be selected from formative assessment or summative assessment. These data were evidence of student learning. Mattos et al. (2016) acknowledged the role of using such data in the professional learning community, stating, “Until educators are using evidence of student learning generated from team-developed common formative assessments to inform and improve their individual and collective practices, they are not fully engaged in the PLC process” (p. 109).

The second element was the use of guiding questions. In post exam analysis, teachers centered on one or more guiding questions to discover the strengths and weaknesses in students’ masteries of knowledge points based on the students’ data. In open lesson debrief sessions, LPG group leaders asked specific questions to have teachers critically evaluate how an open lesson was taught.

The third element was peer feedback. In both events, teachers were asked to give feedback to their peers, and teachers reported constructive feedback helped them advance their teaching practices.

The last element was the action steps. By participating in both events, peer feedback enabled teachers to create shared and personalized action steps to improve students’ learning.

The elements of student data, guiding questions, peer feedback and action steps allowed teachers to reflection on action using evidence and plan together toward a shared interest. Reflection on action is where someone reflect back on events in the past (Schon, 1983) and it is an “analytical exercise, which results in new perspectives on experiences,

changes in behaviors, and commitments on action” (Merriam et al., 2007, p. 175).

Unfortunately, the shared elements that existed in post exam analysis and the open lesson debrief sessions were not present in weekly LPG meetings. This result may be because only one agreed upon goal by LPG group leaders was planning and unifying teaching progress and teaching content, despite the fact school leaders named other goals that should have carried out in LPG meetings. To achieve the only agreed-upon goal in weekly LPG meetings, the teachers may not necessary to engage reflection. Another possible explanation of this finding might be LPG group leaders had a lack of understanding of what reflection was expected to look like in weekly LPG meetings, and they did not understand behavioral indicators that would indicate discussions were reflective and had an impact on teachers’ practices.

School leaders in both schools counted on the LPG group leaders to encourage and guide reflective discussions in LPG meetings, but they did not have any documents outlining guidelines and expectations of LPGs. The absence of official guidelines could be due to school leaders assuming LPG group leaders would have a clear understanding of what their goals were and responsibilities were, as the LPG group leaders had been observing how other LPG group leaders had done the job in the past years. The absence of written documents was unexpected and may explain the misalignment between school leaders’ perceptions of LPG goals and LPG group leaders’ understanding of LPG goals. This finding reflects the work of DuFour and DuFour (2016), seminal researchers in the field of PLC, claimed in their work about how establishing and outlining the bedrock of PLC helps practitioners to create collaborative teams. They suggested the foundation of a PLC relies on four pillars: (a) mission (a fundamental purpose helps to identify clarifies

and focuses), (b) vision (a compelling future helps to give clear directions), (c) values (collective commitments help to guide behavior), and (d) goals (targets and timelines help to establish priorities). The work of DuFour and DuFour (2016) implies that PLC needs agreed upon mission, vision, values and goals, and these elements ought to be codified. Codifying would help to create the shared understanding of these pillars.

School leaders expected teachers to engage in reflection on individual levels (through recording reflective thoughts in the teaching plan booklet) and group levels (reflection in weekly LPG meetings and in open lesson debrief sessions). These expected reflection opportunities seemed rooted in the constructivist perspective of reflection. In the constructivist perspective, “reflection is a conscious and explicit process, with the aim of meaning-making” (Lundgren et al., 2017, p. 307). In workplace settings, individuals engaged in the reflective thinking process explicitly notice and frame problems, dialogue with other practitioners, and experiment with possible solutions (Schon, 1983). Similarly, school leaders expected teachers to actively engage in meaningful discussions during LPG meetings to further guide actions in the classroom. However, teachers may have engaged in implicit reflective process.

In this study, teachers engaged reflection through a variety of opportunities. Besides attending open lesson debrief sessions and having post exam discussions with colleagues, teachers also engaged in reflection when they took notes in teaching plan booklets, had informal discussions with colleagues, or had self-reflection moments. Teachers embraced these opportunities to improve their teaching practices. When they engaged in reflection in these moments, the reflection could have been conscious or unconscious. Lundgren et al. (2017) defined reflection in situative perspectives as “one of



many learning experiences; work-based tools and systems trigger participation and collaboration between learners and in interaction with their context – with little organizing or formal intervention required” (p. 311). Unlike in the constructivist perspective, the reflective process in the situated perspective may be “presented as implicitly integrated with tasks at hand” (Lundgren et al., 2017, p. 307). When individuals participate and collaborate in the workplace, surrounding factors, such as people and tools, can trigger the reflective processes. This process may be implicit.

### **The Group Learning Conditions in LPG Meetings**

The researcher observed facilitation challenges of LPG group leaders through researcher observations and group dynamics challenges the LPG group leaders have encountered in managing and facilitating LPGs. These challenges included teachers’ lack of interest in meeting content, teachers’ resistance to change, managing generation gaps, teachers’ unwillingness to take part in group discussions, and teachers’ unwillingness to share the workload. Younger LPG group leaders in the study seemed unsure about how to approach these challenges.

**Trust.** The observed and elucidated facilitation challenges of LPG group leaders could be attributed to the lack of trust among teachers in LPG. When the majority of teachers trusted members of the LPG, they were more likely to embrace and try new ways of doing things. Osterman and Kottkamp (1993) asserted trust might be the most essential condition to motivate reflective practice. Group members need to feel safe in participating.

When trust is not successfully built in the group, members are less likely to be open. The GLS was used to examine participants’ opinions on team learning conditions,

including teamwork appreciation, individual expression, and operating principals. What stood out in the GLS data was the variation in the responses on individual expression. Dechant and Marsick (1993) stated the individual expression “reflects the degree to which members feel comfortable expressing their objections in team meetings . . . the opportunities that an individual has to make his/her position known during team discussions or actions” (p. 10). In this study, group members held different opinions about whether they were open to sharing negative thoughts with each other. In high-functioning PLCs, “members embrace differences in opinion, are willing to ask the hard questions of one another, and have built a level of trust and candor more common in family units than in groups of teachers with common time” (Venables, 2018, p. 19). Venables (2018) defined trust in PLCs as “the extent to which a teacher believes in the judgment, integrity, and track record of the people with whom he or she works” (p. 27). Whether a group member trusts in the process or other group members depends on how the person perceives decisions made by the group leader and outcomes of previous interactions with group members.

**Group norms.** Drago-Severson (2009) highlighted how group norms help group members feel safe in sharing experiences and insights. Drago-Severson believed:

To build a team in which each member feels that he or she has an equal say, feels respected as a contributor, and supported as a learner, it is important to establish norms for engagement and to agree upon how to attend to confidentiality. (p. 92)

The researcher noticed the lack of group norms in this study. The lack of trust among group members could be explained by the absence of group norms, which would govern how teachers were expected to work collaboratively and share practices. This notion is also supported by the literature. York-Barr et al. (2016) claimed, “Trust and respect need

to be operationalized through the practices of group norms” (p. 65). In all observations, none of the LPG group leaders practiced group norms.

According to the researcher’s observation notes and LPG group leaders’ claims, the group size of over six people presented challenges in terms of group participation and dynamics. Johnson and Johnson (1999) stated the optimal group size for collaboration is four to six people. Half of the LPGs in this study were over six people. Among these LPGs, many teachers were not present in the LPG meetings because they were doing nonmeeting tasks (e.g., chatting using cell phones, grading student’s homework). LPG group leaders pointed out these behaviors had become normal and seemed acceptable in LPG meetings. Group learning conditions would be jeopardized when LPG group leaders were not able to meet the challenges.

Establishing trust and group norms can be different in Eastern cultures because trust is a culture-specific concept. Lee et al. (2011) reported, “Trust in PLCs becomes even more problematical as societies like China engage in wide-ranging political, social, and economic reforms” (p. 827). Behaviors that manifest could be different in the Chinese context when comparing behaviors to a Western context.

## **Conclusions**

The researcher has drawn three conclusions based on the findings and interpretations of this study.

### **Conclusion 1**

Conclusion 1 is that school leaders did not create holistic and robust systems to support and evaluate school-wide reflective practice. School leaders believed and

expected teachers to be reflective practitioners. In this study, LPG group leaders' agreed goals of LPG meetings did not require teachers to engage in reflective discussions.

School leaders did not prepare LPG group leaders well to facilitate reflective discussions in LPG meetings. The lack of assessment methods demonstrates school leaders did not stress enough the importance of reflection in LPG meetings to the school community.

School leaders and administrators need to check alignments regularly to ensure practices reflect expected behaviors.

## **Conclusion 2**

Conclusion 2 is that preparing and facilitating LPG meetings requires LPG group leaders have clear understandings of the goals of LPG meetings, their responsibilities, and school expectations. LPG group leaders prepared teachers well to come to the same understanding about what is coming next in teaching and student learning at LPG meetings. However, they lacked skills in facilitating group discussions to encourage reflective practice and meet teachers' professional development needs. They also faced group dynamic challenges, but they were reluctant to deal with the challenges.

## **Conclusion 3**

Conclusion 3 is that LPG group leaders were expected to intentionally facilitate in-depth discussions on teaching practices, content, methods, and teaching strategies. Teachers' experiences with reflective practices in LPG meetings depended on the type of LPG meeting held and elements involved. When LPG meetings were designed to facilitate reflection on past teaching with the use of student data, teachers engaged in reflective discussions as a group.

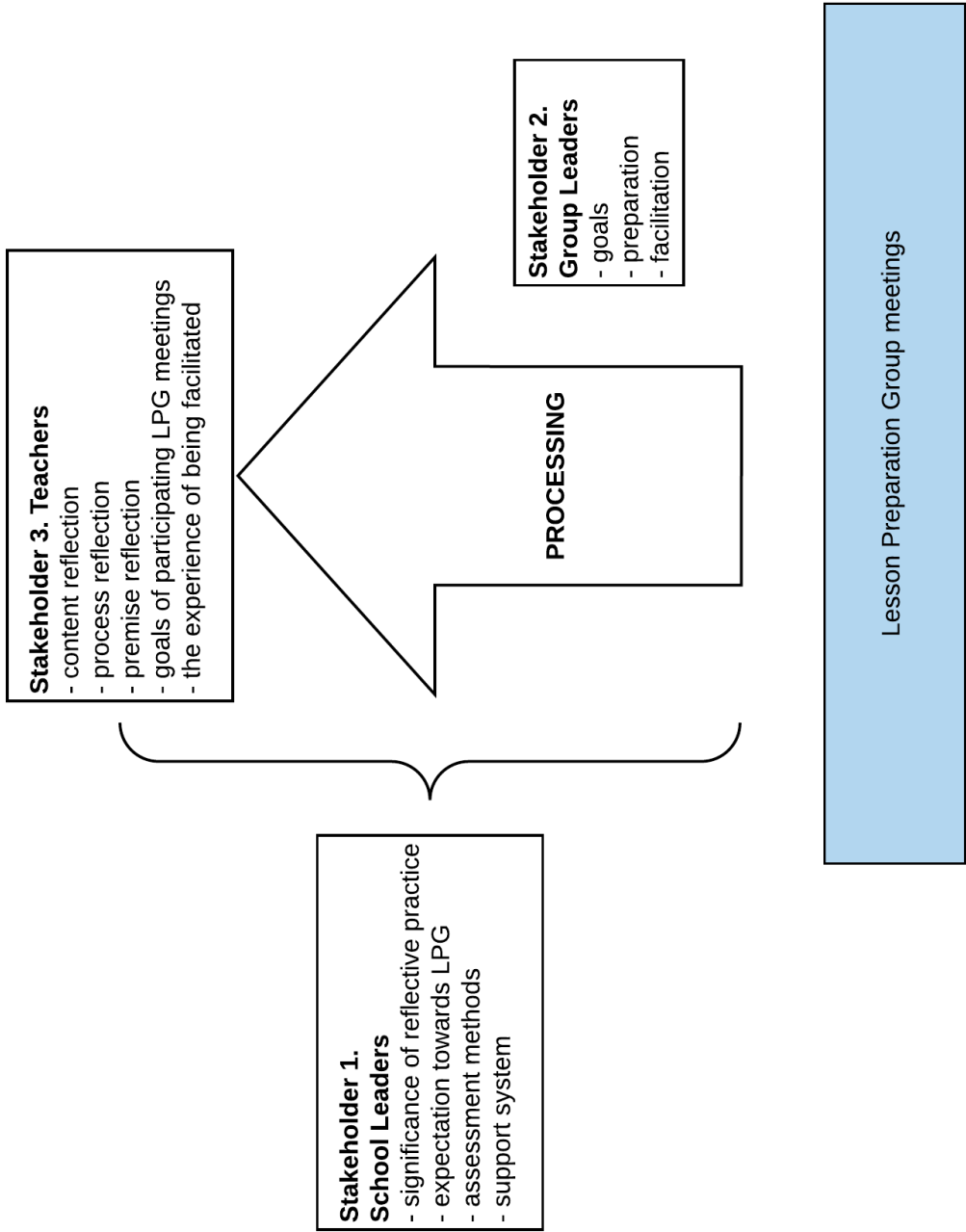
### **Revised Conceptual Framework**

The original conceptual framework (see Figure 4) highlighted the process of learning from experience. School leaders' (Stakeholder 1) perceptions and support toward LPGs influenced both LPG group leaders' actions and teachers' experience. LPG group leaders' (Stakeholder 2) goals for LPG meetings and their preparation and facilitation influenced the process of how teachers (Stakeholder 3) reflected on teaching experiences and their goals in participating in LPG meetings.

The revised conceptual framework (see Figure 5) emphasized the top-down approach and the critical role of school leaders have shaping reflective practices. In the revised conceptual framework, the researcher modified the framework to reflect the implications that were aligned with the research findings. First, the researcher added new elements to the framework to address structural conditions, mindsets, and skillsets that need to be in place to achieve the intended outcomes. Second, the researcher moved school leaders (Stakeholder 1) to the top of the framework and used arrows to illustrate how school leaders' perceptions and values influence the LPG group leaders and teachers (the other stakeholders).

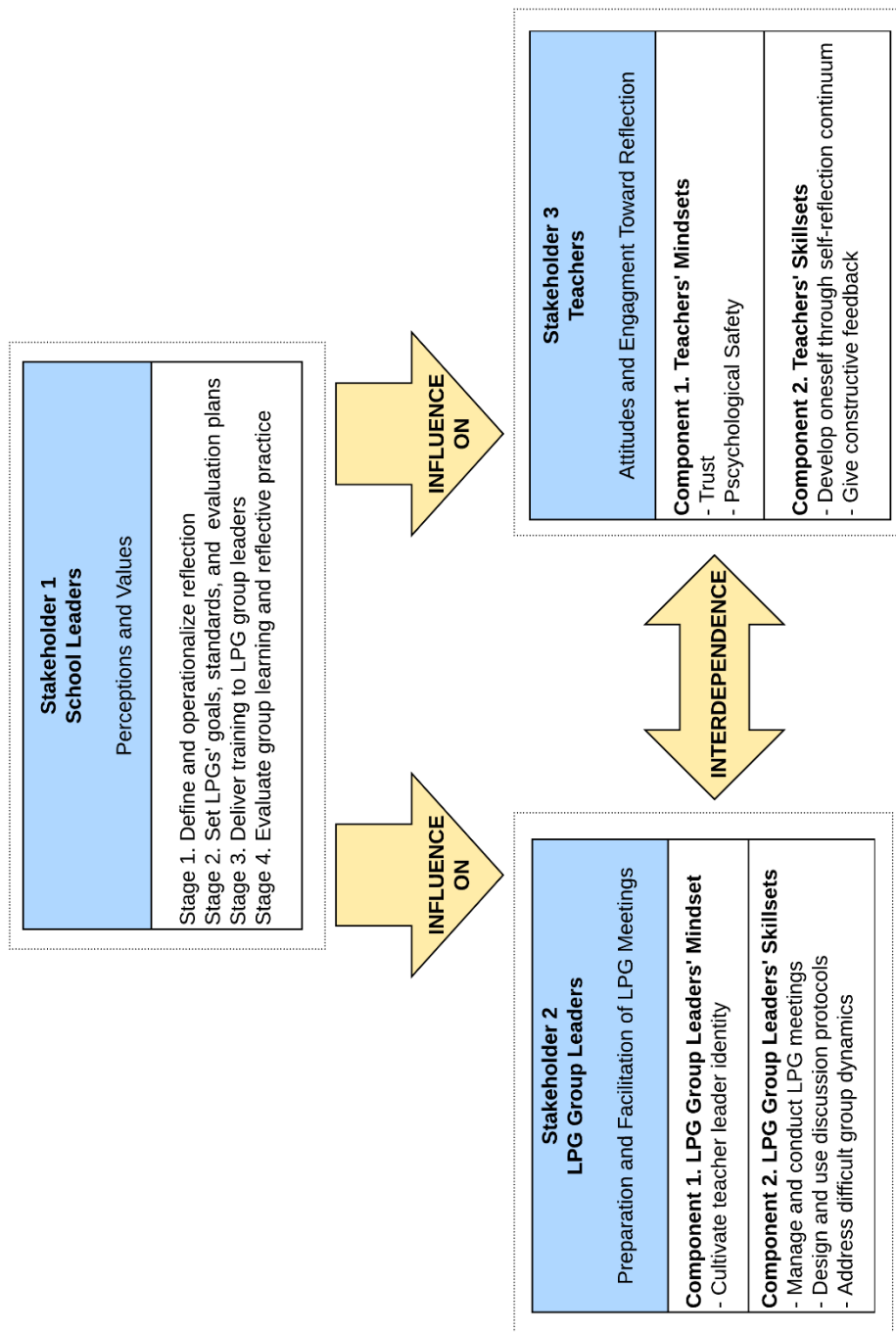
For Stakeholder 1, the researcher outlined four stages to build the foundation for reflection in LPG meetings. These new elements reflected the implications of Finding #1, Finding #2, Finding #3, and Finding #4 in Appendix T. For Stakeholder 2 and Stakeholder 3, the researcher pointed out the essential mindset and skillset for LPG group leaders and teachers to build (reflected the implications of Finding #5, Finding #6, Finding #7, Finding #8, and Finding #9 in Appendix T). The contribution of this research

**Figure 4**  
*Original Conceptual Framework*



**Figure 5**

*Revised Conceptual Framework: Creating Reflective Practice in LPG Meetings Model*



to the body of knowledge about creating a reflective school community is manifested in the added elements.

In creating a school-wide reflective practice community through LPG meetings in China, school leaders' perceptions and values of school-wide reflective practice have an interactive influence on the interdependence between LPG group leaders' preparation and facilitation of LPG meetings, and teachers' attitudes and engagement toward reflection in the meetings.

As seen in the revised conceptual framework, school leaders' perceptions and values of school-wide reflective practice influence how LPG group leaders prepare and facilitate LPG meetings and teachers' attitudes and engagement toward reflection. There appears to be an interdependent relationship between the interaction of LPG group leaders' preparation and facilitation and teachers' attitudes and engagement of reflection and reflective practices led by LPG group leaders.

## **Recommendations**

### **Recommendations for Future Research**

Following are recommendations for further research.

#### **General research.**

1. A longitudinal study should be conducted, which follows LPG group leaders from the beginning of the school year and tracks groups until the end of the school year, to efficiently determine long-term patterns.



2. An action research study with a focus on enhancing reflective practices through weekly LPG meetings should be conducted.
3. A mixed-method study should be conducted to discover what behaviors manifest trust and what actions LPG group leaders could take to build trust in the Chinese context, where both quantitative and qualitative data sources are used to validate findings.
4. A qualitative study should be done at international schools or private schools to provide opportunities for comparative analysis with findings from this study.
5. A research study with a focus to track the impact of the outcomes from the LPG meetings on teachers' teaching and the students' learning should be conducted.

**Research based on demographic information.**

1. A study should be conducted with participants who serve in the group leader's role for the first time. The study would allow for an opportunity to discover initial perceptions in taking the role and the school support they need to be successful in the job.
2. A study should be conducted with participants who are younger than 35 and older than 50 years of age. The study would allow for opportunities to examine patterns of responses by age groups.

### **Recommendations for School Leaders and School Administrators**

The researcher provides four recommendations for school leaders and school administrators who would like to build a school-wide reflective practice community in Chinese public secondary schools. The researcher referred to the revised conceptual framework as the groundwork to propose these recommendations:

1. Schools should provide a handbook that outlines responsibilities, general expectations, toolkits, and assessment criteria of LPGs and LPG group leaders. Assessment criteria should focus on how the school assesses reflection, reflective practice, and group learning.
2. Schools should establish training programs for LPG group leaders, where they can learn theoretical foundations about adult learning principles, reflection, facilitation, group dynamics, managing meetings, facilitating discussions, and confronting interpersonal obstacles. The training could cultivate both mindsets and skillsets.
3. School leaders should create conditions for creating school-wide reflective practices by modeling expected behaviors. School leaders should model reflection in their school and in Chinese culture through everyday practices.
4. School leaders should implement a peer coaching program to expand professional learning opportunities and sustain collaborative relationships among teachers out of the LPG meetings, so that teachers could scaffold reflection in the informal learning settings.
5. School leaders should examine how they recruit, select, and reward LPG group leaders.

### **Recommendations for LPG Group Leaders**

The researcher provides eight recommendations for LPG group leaders who would like to create reflective and sustainable groups. The researcher referred to the revised conceptual framework as the framework for these recommendations:

1. LPG group leaders should be supported in transforming their identities from classroom teachers to teacher leaders. They should perceive themselves as the learning facilitator (a type of teacher leader) of the LPG to maximize the quality of the interactions among teachers.
2. LPG group leaders should facilitate discussions with thought-provoking questions that encourage reflection with teachers in LPG meetings.
3. LPG group leaders should take viable steps to build trust in LPGs by discussing and creating group norms that embody trust.
4. LPG group leaders should take time to learn teachers' needs and expected outcomes from attending LPG meetings.
5. LPG group leaders should design and use protocols to guide reflective discussions. Using protocols could "enable educators and interested others to learn more deeply about teaching and learning" (Allen & Blythe, 2004, p. 11). In LPG meetings, protocols would allow LPG group leaders to facilitate reflections on guiding questions by inviting teachers to examine their practices and their participation in the group (Drago-Severson, 2009).
6. LPG group leaders should lead groups to reach consensus about how they will make decisions.

7. LPG group leaders should conduct closing reflections at the end of each meeting to create space for teachers to reflect on ideas and questions from the meeting. This practice also encourages teachers to build reflective mindsets.
8. LPG group leaders should use theories and tools (e.g., Hall and Simeral's [2017] continuum of self-reflection) to help identify teachers' reflective abilities and guide them through the process to make informed decisions and become reflective practitioners.

### **Researcher Assumptions Revisited**

As outlined in Chapter I, the researcher held five assumptions during this study. The researcher revisited the assumptions, considering the findings and interpretations presented in this chapter. The assumptions were:

1. LPG group leaders incorporate reflection, critical reflection, and meaningful dialogue while they facilitate LPG meetings.
2. LPG group leaders are self-directed and lifelong learners who are intrinsically motivated to enhance their teaching practices.
3. LPG group leaders take active and collaborative approaches in working with fellow teachers.
4. Teaching practice is improved by reflective practices.
5. LPG meetings require supportive practices from school principals.

#### **Assumption 1**

The researcher assumed LPG group leaders would incorporate reflection, critical reflection, and meaningful dialogue in LPG meetings. Based on data collected in this

study, this assumption holds true from what the researcher discovered from school leaders' expectations, but this assumption is inconclusive with regard to LPG group leaders. School leaders from both schools affirmed the significance of LPG meetings' roles in creating cultures of reflective practice. Teachers engaged in reflective discussions in selected LPG meetings.

### **Assumption 2**

The researcher assumed LPG group leaders would be self-directed and lifelong learners with intrinsic motivation to continuously advance their teaching practices. Based on the data collected in this study, this assumption holds true from what the researcher discovered from school leaders' expectations, but this assumption is inconclusive with regard to LPG group leaders. Being advanced in their field is one of the top selection criteria of LPG group leaders, according to the interviews with school leaders. When the researcher asked school leaders for suggestions for first-time LPG group leaders, several suggested LPG group leaders should be motivated to study and impart cutting-edge research and practices to fellow teachers. However, the researcher did not collect sufficient data to articulate LPG group leaders' perspectives and practices in this regard. Thus, this assumption validated the school leaders' expectations but not LPG group leaders' practices.

### **Assumption 3**

The researcher assumed LPG group leaders would take active and collaborative approaches to work with fellow teachers. Based on the data collected in this study, this assumption was partially true. LPG group leaders' approaches to LPGs depended on

group sizes, LPG group leaders' understandings of the role, goals and agendas of LPG meetings, and the perceived teacher willingness and interest to collaborate. In groups with fewer than six participants, LPG group leaders were more likely to allocate tasks, whereas in groups with more than six participants, LPG group leaders tended to avoid allocating tasks and mostly completed the tasks by themselves.

#### **Assumption 4**

The researcher assumed when teachers engaged in reflective practices, their teaching practices would improve. Based on the data collected in this study, this assumption was inconclusive. School leaders advocated reflective practice in their school communities, but the limitations of the study's design prevented the researcher from exploring findings in this regard. Future research should investigate how reflective practices can foster teaching practices.

#### **Assumption 5**

The researcher assumed LPG group leaders' successful facilitation would require supportive practices from school leaders. Based on the data collected in this study, this assumption was partially true. Although school leaders affirmed schools had employed various means to monitor and support LPG group leaders' work, LPG group leaders in both schools did not receive any skill-based training in developing their facilitation and conflict resolution skills. Most trainings for the LPG group leaders were exam or policy related.

### **Reflections on the Study**

The researcher used qualitative case study to explore group learning and reflective practice in LPG meetings. Robert K. Yin (2014) described five characteristics of an exemplary case study, including the significance of the case study, the completeness of the case study, the alternative perspectives of the case study, the sufficient evidence of the case study, and the writing style of the case study.

In terms of significance, the discussions, conclusions and recommendations were the results of the study where the researcher analyzed different sources of data within and cross 11 groups, and ultimately proposed the new conceptual framework. In terms of completeness, the researcher collected and analyzed data in each group ranging from the semi-structured interviews, demographic data, GLS data, RQ data, and researcher observation notes and journal. However, the researcher faced one challenge when she tried to access equal group quantities from both schools. The researcher initially had more groups to access in School 2, however several groups in School 2 were not able to participate because of the busy schedule of teachers and unwillingness to participate in the interview. Another challenge to completeness in this study was gathering descriptive data about participants' experiences of actual discussions in LPG meetings. The researcher needed to modify the interview protocols, as some participants had difficulty articulating their experiences during the interviews. This case study also considered alternative perspectives, including the perspectives of LPG group leaders, at least one respective teacher, and at least two school leaders from each school.

This study attempted to address gaps in the literature related to PLC in China, school-based teaching and research activities, and LPG by considering how school

leaders value and evaluate reflective practice in LPG, how LPG group leaders approach LPG meetings with teachers, and how teachers experience reflective practice in LPG meetings. The researcher hopes that the findings and implications highlighted in the study provide opportunities for further exploration and innovation in the field.



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## Appendix A

### Bilingual Informed Consent and Participant Rights – School Leaders

#### **INTRODUCTION 介绍**

You are being invited to participate in this research study called “How the leaders of teacher learning groups facilitate group learning and reflective practice in Chinese public secondary schools.” You may qualify to take part in this research study because you are currently working at a public secondary school in the Guangdong province of mainland China and currently serves as a principal, assistant principal, or an individual who is responsible for an instructional leadership.

您被邀请参与此项研究，该研究主题为“中国公立初高中教研组长是如何引领团队学习和实施反思性实践的？”。您有资格参加此项研究是因为您目前就职于中国大陆内广东省的一所公立中学，同时担任校长、副校长、或负责学校教学工作。

Approximately 40 people will participate in this study and it will take between 45 minutes to 60 minutes of your time to complete.

大约 40 人会参与到此项研究。您参与的时长大概在 45 分钟到 60 分钟之间。

#### **WHY IS THIS STUDY BEING DONE? 为什么要做此项研究？**

This study is being done to determine how school-based teaching and research activities (*jiaoyan huodong*) are facilitated by the leaders of teacher learning groups, and to discover the current state of reflective practice in a sample of school-based teaching and research activities (*jiaoyan huodong*).

进行这项研究的目的是探索教师学习小组带头人是如何引领校本教研活动的，以及反思性实践在校本教研活动中是如何实施的。

#### **WHAT WILL I BE ASKED TO DO IF I AGREE TO TAKE PART IN THIS STUDY? 如果我同意参加此项研究，我需要做些什么？**

If you decide to participate, you will be interviewed by the principal investigator either face-to-face, telephone, or online for 40 minutes. The interview will focus on your experiences of *jiaoyanzu* and the leaders of teacher learning groups’ facilitation of reflective practice in your school. The interview will be audio recorded. If you do not wish to be audio recorded, you can still participate in this study, the researcher will just take hand notes. You will be given a pseudonym or false name/de-identified code in order to keep your identity confidential.

如果您决定参与此项研究，研究员将会与您有一个 40 分钟左右的一对一采访。采访方式也许是面谈，或是通过电话，或是在线视频。此内容与贵校教研组的情况相关，以及在校本教研活动中实施反思性实践的情况相关。研究员将会录音整个采访内容。如果您希望不被录音，您还可以继续参与此研究，研究员将只会在采访期间做笔记。为了让您的身份得到保密，研究员将会给您一个假名或代码。

Finally, you will be asked to complete a survey. The survey will ask you demographic questions. The surveys will take approximately 5 minutes in total to complete.

最后，研究员将会让您填写一份问卷。这份问卷需要您填写一些基本信息。完成问卷的总时长大概是 5 分钟。

### **WHAT POSSIBLE RISKS OR DISCOMFORTS CAN I EXPECT FROM TAKING PART IN THIS STUDY? 参与此项研究，我可能会承担什么风险？**

Risks are no greater than would be experienced in holding conversations with others outside the group about your experience in working and learning supported by your group. However, some risks may include discomfort sharing your experiences with teaching. Participation in this research study is completely voluntary. You have the right to withdraw at any time or refuse to participate entirely without jeopardy to your career. 参加此研究的风险不会超过与小组外的其他人就您在教研组工作和经历进行对话时所产生的风险。然而，风险可能包括在分享您教学经历时的不安。参与此项研究是完全自愿的。您有权在任何时候退出或者拒绝参与。这个决定将不会危及到您的工作。

The principal investigator is taking precautions to keep your information confidential and prevent anyone from discovering or guessing your identity, such as using a pseudonym instead of your name and keeping all information on a password protected computer and locked in a file drawer.

研究员采取预防措施对您的信息进行保密，防止任何人发现或推测出您的身份。这些措施包含使用假名而非您的真名，并将所有信息保存在一个有密码保护的电脑上，同时将文件锁在抽屉里。

### **WHAT POSSIBLE BENEFITS CAN I EXPECT FROM TAKING PART IN THIS STUDY? 参与此项研究对我有什么好处？**

There is no direct benefit to you for participating in this study. Participation may benefit the field of teacher professional development to better understand the best way to implement school-based teaching and research activities (*jiaoyan huodong*).

参与此项研究并无直接的好处。但您的参与将会让整个教师职业发展领域受益，更好地理解并实施校本教研活动。

### **WILL I BE PAID FOR BEING IN THIS STUDY? 参与此项研究我会从中得到报酬吗？**

There is no direct compensation for participation in this study.

参与此项研究您将不会获得酬劳。

### **WHEN IS THE STUDY OVER? CAN I LEAVE THE STUDY BEFORE IT ENDS? 此项研究什么时候结束？在研究结束前我可以退出吗？**

The study is over when you have completed the interview and filled out the survey.

However, you can leave the study at any time even if you haven't finished.

当您在完成了采访和问卷后，您的参与就结束了。当然，即使您还没有完成整个参与过程，您也可以选择在任何时间退出。

### **PROTECTION OF YOUR CONFIDENTIALITY 保密**

All data obtained from participants will be kept confidential and will only be reported in an aggregate format (by reporting only combined results and never reporting individual ones). Pseudonyms (fake names) will be used in analyzing data and reporting findings. No one other than the principal investigator listed below will have access to recordings or analyzed data, which will be collected and stored in a locked cabinet at the principal investigator's home. What is on the audio recording will be transcribed (written down), and then the audio recording will be destroyed.

所有收集的数据将会被严格保密，参与者的个人信息将不会出现在最终的论文中，只有整合的数据会在论文中出现。假名将用于分析数据和报告结果。除了研究员以外，不会有任何其他人有机会接触到所收集的数据和分析后的数据。这些数据将保存在研究员家中带锁的档案柜中。音频内容将会被转录（写下来），之后录音将会被销毁。

The principal investigator will hire professional transcriptionists to transcribe audio-recorded interviews. The professional transcriptionists will complete a Non-Disclosure (Confidentiality) Agreement.

研究员将会聘请专业的转录员来转录录音采访。专业的转录员将会在转录前签写一份保密协议。

For quality assurance, the study team, the study sponsor (grant agency), and/or members of the Teachers College Institutional Review Board (IRB) may review the data collected from you as part of this study. Otherwise, all information obtained from your participation in this study will be held strictly confidential and will be disclosed only with your permission or as required by U.S. or State law.

为了保证质量，研究团队，或者研究发起人，和/或哥伦比亚大学教师学院的“审查委员会”（人类研究伦理委员会）可能会查看收集的数据。除此之外，您参与此研究所获得的信息将被严格保密。只有在您的允许或者美国法律、州的法律要求情况下才会公开。

### **HOW WILL THE RESULTS BE USED? 研究结果将会被如何使用？**

This study is being conducted as part of the dissertation of the principal investigator. The results of this study might be published in journals and presented at academic conferences. Your identity will be removed from any data you provide before publication or use for educational purposes.

此项研究是研究员博士论文中的一部分。研究结果可能会发表在期刊上，并在学术会议上发表。不管是用于发表或其他教育目的，在使用之前，您的身份将会从数据中删除。

### **CONSENT FOR AUDIO RECORDING? 是否同意被录音？**

Audio recording is part of this research study. You can choose whether to give permission to be recorded. If you decide that you don't wish to be recorded, you will still be able to participate in this study.

音频录制是此项研究的一部分。您可以选择是否允许被录音。如果您不希望被记录下来，您仍然可以参加此项研究。

\_\_\_\_\_ I give my consent to be recorded 我同意被录音

Signature 签名: \_\_\_\_\_

\_\_\_\_\_ I do not consent to be recorded 我不同意被录音

Signature 签名: \_\_\_\_\_

### **WHO MAY VIEW MY PARTICIPATION IN THIS STUDY 谁可以看到我参与此项研究?**

\_\_\_\_\_ I consent to allow written and/or audio recorded materials viewed at an educational setting or at a conference outside of Teachers College 我同意书面和/或音频录制的资料在哥伦比亚大学教师学院以外的教育场所或会议上被查看。

Signature 签名: \_\_\_\_\_

\_\_\_\_\_ I do not consent to allow written and/or audio recorded materials viewed outside of Teachers College Columbia University 我不同意书面和/或音频录制的资料在哥伦比亚大学教师学院以外的教育场所或会议上被查看。

Signature 签名: \_\_\_\_\_

### **OPTIONAL CONSENT FOR FUTURE CONTACT 是否同意未来再与您联系?**

The investigator may wish to contact you in the future. Please initial the appropriate statements to indicate whether or not you give permission for future contact.

研究员可能希望在未来与您取得联系。请您用姓名的首字母签名来标明您是否允许未来与您取得联系。

I give permission to be contacted in the future for research purposes:

我同意在未来与我有与研究为目的进行联系。

Yes 是 \_\_\_\_\_ No 否 \_\_\_\_\_

Initial 用姓名的首字母签名

Initial 用姓名的首字母签名

I give permission to be contacted in the future for information relating to this study:

我同意在未来针对此项研究相关的信息与我进行联系。

Yes 是 \_\_\_\_\_ No 否 \_\_\_\_\_

Initial 用姓名的首字母签名

Initial 用姓名的首字母签名

**WHO CAN ANSWER MY QUESTIONS ABOUT THIS STUDY? 谁可以回答我针对此项研究持有的问题?**

If you have any questions about taking part in this research study, you should contact the principal investigator, Ms. Xuejiao Lin, at [cindy.lin@tc.columbia.edu](mailto:cindy.lin@tc.columbia.edu) or at 617-999-0500. You can also contact the faculty advisor, Dr. Victoria Marsick at [marsick@exchange.tc.columbia.edu](mailto:marsick@exchange.tc.columbia.edu).

如果您对参与此项研究有任何疑问，请联系本研究的主要研究员林雪娇女士，[cindy.lin@tc.columbia.edu](mailto:cindy.lin@tc.columbia.edu)，或电话 617-999-0500。您也可以联系该博士生导师 Marsick 博士，[marsick@exchange.tc.columbia.edu](mailto:marsick@exchange.tc.columbia.edu)。

If you have questions or concerns about your rights as a research subject, you should contact the Institutional Review Board (IRB) (the human research ethics committee) at 212-678-4105 or email [IRB@tc.edu](mailto:IRB@tc.edu). Or you can write to the IRB at Teachers College, Columbia University, 525 W. 120<sup>th</sup> Street, New York, NY 10027. The IRB is the committee that oversees human research protection for Teachers College, Columbia University.

如果您对作为研究对象有任何疑问或者顾虑，请您联系“审查委员会”（人类研究伦理委员会），电话 212-678-4105 或者邮箱 [IRB@tc.edu](mailto:IRB@tc.edu)。您也可以写信给哥伦比亚大学教师学院的“审查委员会”，地址是 525 W. 120<sup>th</sup> Street, New York, NY 10027。“审查委员会”是负责监督哥伦比亚大学教师学院人类研究保护的委员会。

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## **PARTICIPANT'S RIGHTS**

### **参与者的权利**

- I have read and discussed the informed consent with the researcher. I have had ample opportunity to ask questions about the purposes, procedures, risks and benefits regarding this research study. 我已经阅读并与研究员讨论了知情同意书的内容。我曾有充分的机会询问有关此项研究的目的、程序、风险和益处。
- I understand that my participation is voluntary. I may refuse to participate or withdraw participation at any time without penalty to future employment. 我明白我的参与是自愿性质的。我可以在任何时候拒绝参与或退出参与，此行为不会影响到我的工作。
- The researcher may withdraw me from the research at his or her professional discretion. 研究员可以根据她的专业判断让我退出研究。
- If, during the course of the study, significant new information that has been developed becomes available which may relate to my willingness to continue my participation, the investigator will provide this information to me. 在参与研究期间，如果有重要的新信息会影响我继续参与研究的意愿，研究员将会向我提供这些信息。
- Any information derived from the research study that personally identifies me will not be voluntarily released or disclosed without my separate consent, except as specifically required by law. 从研究中获得的任何与我相关的信息，都不会在未经被人同意的情况下公布或披露，除非法律明确规定。
- Identifiers may be removed from the data. De-identifiable data may be used for future research studies, or distributed to another investigator for future research without additional informed consent from the subject or the representative. 标识符将从数据中删除。无标识符的数据可能被用于未来的研究，或派发给另外一位研究员以供今后的研究，这个行为将不需要获得该参与者的进一步知情同意。
- I should receive a copy of the Informed Consent document. 我将会收到一份知情同意书的副本。

**My signature means that I agree to participate in this study** 我的签名代表我同意参与此研究。

**Print name 姓名:** \_\_\_\_\_

**Date 日期:** \_\_\_\_\_

**Signature 签名:** \_\_\_\_\_

## Appendix B

### Bilingual Informed Consent and Participant Rights – LPG Group Leaders

#### **INTRODUCTION 介绍**

You are being invited to participate in this research study called “How the leaders of teacher learning groups facilitate group learning and reflective practice in Chinese public secondary schools.” You may qualify to take part in this research study because you are currently working at a public secondary school in the Guangdong province of mainland China, currently teaching subject matter courses on a regular basis, and currently facilitating school-based teaching and research activities (*jiaoyan huodong*).

您被邀请参与此项研究，该研究主题为“中国公立初高中教师学习小组带头人是如何引领团队学习和实施反思性实践的？”。您有资格参加此项研究是因为您目前就职于中国大陆内广东省的一所公立中学，同时在一线教书，并在学校引领校本教研活动。

Approximately 40 people will participate in this study and it will take between 115 minutes to 175 minutes of your time to complete.

大约 40 人会参与到此项研究。您参与的时长大概在 115 分钟到 175 分钟之间。

#### **WHY IS THIS STUDY BEING DONE? 为什么要做此项研究？**

This study is being done to determine how school-based teaching and research activities (*jiaoyan huodong*) are facilitated by the leaders of teacher learning groups, and to discover the current state of reflective practice in a sample of school-based teaching and research activities (*jiaoyan huodong*).

进行这项研究的目的是探索教师学习小组带头人是如何引领校本教研活动的，以及反思性实践在校本教研活动中是如何实施的。

#### **WHAT WILL I BE ASKED TO DO IF I AGREE TO TAKE PART IN THIS STUDY? 如果我同意参加此项研究，我需要做些什么？**

If you decide to participate, you will be observed by the principal investigator for two school-based teaching and research activities (*jiaoyan huodong*). The two observations will take approximately 30 minutes each.

如果您决定参与此项研究，研究员将会去旁听两次您引领的教研活动。每次观察时间大概在 30 分钟左右。

You will also be interviewed by the principal investigator either face-to-face, telephone, or online for 40 minutes. The interview will focus on your experiences of Teaching Research Groups (TRGs) (*jiaoyanzu*) and the leaders of teacher learning groups’ facilitation of reflective practice in your group. The interview will be audio recorded. If you do not wish to be audio recorded, you can still participate in this study, the researcher will just take hand notes. You will be given a pseudonym or false name/de-identified code in order to keep your identity confidential.



同时，研究员将会与您有一个 40 分钟左右的一对一采访。采访方式也许是面谈，或是通过电话，或是在线视频。此内容与您在教研组的经历相关，以及在校本教研活动中实施反思性实践的情况相关。研究员将会录音整个采访内容。如果您希望不被录音，您还可以继续参与此研究，研究员将只会在采访期间做笔记。为了让您的身份得到保密，研究员将会给您一个假名或代码。

Finally, you will be asked to complete three surveys. The first two surveys will ask you questions about your experience in working and learning in your group. The last survey will ask you demographic questions. The three surveys will take approximately 15 minutes in total to complete.

最后，研究员将会让您填写三份问卷。前两份问卷问题将会与您在团队工作和学习中的经历有关。最后一份问卷需要您填写一些基本信息。完成三份问卷的总时长大概是 15 分钟。

### **WHAT POSSIBLE RISKS OR DISCOMFORTS CAN I EXPECT FROM TAKING PART IN THIS STUDY? 参与此项研究，我可能会承担什么风险？**

Risks are no greater than would be experienced in holding conversations with others outside the group about your experience in working and learning supported by your group. However, some risks may include discomfort sharing your experiences with teaching. Participation in this research study is completely voluntary. You have the right to withdraw at any time or refuse to participate entirely without jeopardy to your career. 参加此研究的风险不会超过与小组外的其他人就您在教研组工作和经历进行对话时所产生的风险。然而，风险可能包括在分享您教学经历时的不安。参与此项研究是完全自愿的。您有权在任何时候退出或者拒绝参与。这个决定将不会危及到您的工作。

The principal investigator is taking precautions to keep your information confidential and prevent anyone from discovering or guessing your identity, such as using a pseudonym instead of your name and keeping all information on a password protected computer and locked in a file drawer.

研究员采取预防措施对您的信息进行保密，防止任何人发现到或推测出您的身份。这些措施包含使用假名而非您的真名，并将所有信息保存在一个有密码保护的电脑上，同时将文件锁在抽屉里。

### **WHAT POSSIBLE BENEFITS CAN I EXPECT FROM TAKING PART IN THIS STUDY? 参与此项研究对我有什么好处？**

There is no direct benefit to you for participating in this study. Participation may benefit the field of teacher professional development to better understand the best way to implement school-based teaching and research activities (*jiaoyan huodong*).

参与此项研究并无直接的好处。但您的参与将会让整个教师职业发展领域受益，更好地理解并实施校本教研活动。

**WILL I BE PAID FOR BEING IN THIS STUDY? 参与此项研究我会从中得到报酬吗?**

There is no direct compensation for participation in this study.  
参与此项研究您将不会获得酬劳。

**WHEN IS THE STUDY OVER? CAN I LEAVE THE STUDY BEFORE IT ENDS? 此项研究什么时候结束? 在研究结束前我可以退出吗?**

The study is over when you have completed the interview, observations and filled out the surveys. However, you can leave the study at any time even if you haven't finished.  
当研究员旁听了您所带领的教研活动，同时您在完成了采访和问卷后，您的参与就结束了。当然，即使您还没有完成整个参与过程，您也可以选择在任何时间退出。

**PROTECTION OF YOUR CONFIDENTIALITY 保密**

All data obtained from participants will be kept confidential and will only be reported in an aggregate format (by reporting only combined results and never reporting individual ones). Pseudonyms (fake names) will be used in analyzing data and reporting findings. No one other than the principal investigator listed below will have access to recordings or analyzed data, which will be collected and stored in a locked cabinet at the principal investigator's home. What is on the audio recording will be transcribed (written down), and then the audio recording will be destroyed.

所有收集的数据将会被严格保密，参与者的个人信息将不会出现在最终的论文中，只有整合的数据会在论文中出现。假名将用于分析数据和报告结果。除了研究员以外，不会有任何其他人有机会接触到所收集的数据和分析后的数据。这些数据将保存在研究员家中带锁的档案柜中。音频内容将会被转录（写下来），之后录音将会被销毁。

The principal investigator will hire professional transcriptionists to transcribe audio-recorded interviews. The professional transcriptionists will complete a Non-Disclosure (Confidentiality) Agreement.

研究员将会聘请专业的转录员来转录录音采访。专业的转录员将会在转录前签写一份保密协议。

For quality assurance, the study team, the study sponsor (grant agency), and/or members of the Teachers College Institutional Review Board (IRB) may review the data collected from you as part of this study. Otherwise, all information obtained from your participation in this study will be held strictly confidential and will be disclosed only with your permission or as required by U.S. or State law.

为了保证质量，研究团队，或者研究发起人，和/或哥伦比亚大学教师学院的“审查委员会”（人类研究伦理委员会）可能会查看收集的数据。除此之外，您参与此研究所获得的信息将被严格保密。只有在您的允许或者美国法律、州的法律要求情况下才会公开。

**HOW WILL THE RESULTS BE USED? 研究结果将会被如何使用?**

This study is being conducted as part of the dissertation of the principal investigator. The results of this study might be published in journals and presented at academic conferences. Your identity will be removed from any data you provide before publication or use for educational purposes.

此项研究是研究员博士论文中的一部分。研究结果可能会发表在期刊上，并在学术会议上发表。不管是用于发表或其他教育目的，在使用之前，您的身份将会从数据中删除。

### **CONSENT FOR AUDIO RECORDING? 是否同意被录音?**

Audio recording is part of this research study. You can choose whether to give permission to be recorded. If you decide that you don't wish to be recorded, you will still be able to participate in this study.

音频录制是此项研究的一部分。您可以选择是否允许被录音。如果您不希望被记录下来，您仍然可以参加此项研究。

\_\_\_\_\_ I give my consent to be recorded 我同意被录音

Signature 签名:

\_\_\_\_\_

\_\_\_\_\_ I do not consent to be recorded 我不同意被录音

Signature 签名:

\_\_\_\_\_

### **WHO MAY VIEW MY PARTICIPATION IN THIS STUDY 谁可以看到我参与此项研究?**

\_\_\_\_\_ I consent to allow written and/or audio recorded materials viewed at an educational setting or at a conference outside of Teachers College 我同意书面和/或音频录制的资料在哥伦比亚大学教师学院以外的教育场所或会议上被查看。

Signature 签名:

\_\_\_\_\_

\_\_\_\_\_ I do not consent to allow written and/or audio recorded materials viewed outside of Teachers College Columbia University 我不同意书面和/或音频录制的资料在哥伦比亚大学教师学院以外的教育场所或会议上被查看。

Signature 签名:

\_\_\_\_\_

### **OPTIONAL CONSENT FOR FUTURE CONTACT 是否同意未来再与您联系?**

The investigator may wish to contact you in the future. Please initial the appropriate statements to indicate whether or not you give permission for future contact.

研究员可能希望在未来与您取得联系。请您用姓名的首字母签名来标明您是否允许未来与您取得联系。

I give permission to be contacted in the future for research purposes:

我同意在未来与我有与研究为目的进行联系。

Yes 是 \_\_\_\_\_ No 否 \_\_\_\_\_

Initial 用姓名的首字母签名 Initial 用姓名的首字母签名

I give permission to be contacted in the future for information relating to this study:

我同意在未来针对此项研究相关的信息与我进行联系。

Yes 是 \_\_\_\_\_ No 否 \_\_\_\_\_

Initial 用姓名的首字母签名 Initial 用姓名的首字母签名

### **WHO CAN ANSWER MY QUESTIONS ABOUT THIS STUDY? 谁可以回答我针对此项研究持有的问题?**

If you have any questions about taking part in this research study, you should contact the principal investigator, Ms. Xuejiao Lin, at [cindy.lin@tc.columbia.edu](mailto:cindy.lin@tc.columbia.edu) or at 617-999-0500. You can also contact the faculty advisor, Dr. Victoria Marsick at [marsick@exchange.tc.columbia.edu](mailto:marsick@exchange.tc.columbia.edu).

如果您对参与此项研究有任何疑问，请联系本研究的主要研究员林雪娇女士，[cindy.lin@tc.columbia.edu](mailto:cindy.lin@tc.columbia.edu)，或电话 617-999-0500。您也可以联系该博士导师 Marsick 博士，[marsick@exchange.tc.columbia.edu](mailto:marsick@exchange.tc.columbia.edu)。

If you have questions or concerns about your rights as a research subject, you should contact the Institutional Review Board (IRB) (the human research ethics committee) at 212-678-4105 or email [IRB@tc.edu](mailto:IRB@tc.edu). Or you can write to the IRB at Teachers College, Columbia University, 525 W. 120<sup>th</sup> Street, New York, NY 10027. The IRB is the committee that oversees human research protection for Teachers College, Columbia University.

如果您对您作为研究对象有任何疑问或者顾虑，请您联系“审查委员会”（人类研究伦理委员会），电话 212-678-4105 或者邮箱 [IRB@tc.edu](mailto:IRB@tc.edu)。您也可以写信给哥伦比亚大学教师学院的“审查委员会”，地址是 525 W. 120<sup>th</sup> Street, New York, NY 10027。“审查委员会”是负责监督哥伦比亚大学教师学院人类研究保护的委员会。

### **PARTICIPANT'S RIGHTS**

#### **参与者的权利**

- I have read and discussed the informed consent with the researcher. I have had ample opportunity to ask questions about the purposes, procedures, risks and benefits regarding this research study.

我已经阅读并与研究员讨论了知情同意书的内容。我曾有充分的机会询问有关此项研究的目的、程序、风险和益处。

- I understand that my participation is voluntary. I may refuse to participate or withdraw participation at any time without penalty to future employment.  
我明白我的参与是自愿性质的。我可以在任何时候拒绝参与或退出参与，此行为不会影响到我的工作。
- The researcher may withdraw me from the research at his or her professional discretion.  
研究员可以根据她的专业判断让我退出研究。
- If, during the course of the study, significant new information that has been developed becomes available which may relate to my willingness to continue my participation, the investigator will provide this information to me.  
在参与研究期间，如果有重要的新信息会影响我继续参与研究的意愿，研究员将会向我提供这些信息。
- Any information derived from the research study that personally identifies me will not be voluntarily released or disclosed without my separate consent, except as specifically required by law.  
从研究中获得的任何与我相关的信息，都不会在未经被人同意的情况下公布或披露，除非法律明确规定。
- Identifiers may be removed from the data. De-identifiable data may be used for future research studies, or distributed to another investigator for future research without additional informed consent from the subject or the representative.  
标识符将从数据中删除。无标识符的数据可能被用于未来的研究，或派发给另外一位研究员以供今后的研究，这个行为将不需要获得该参与者的进一步知情同意。
- I should receive a copy of the Informed Consent document.  
我将会收到一份知情同意书的副本。

**My signature means that I agree to participate in this study** 我的签名代表我同意参与此研究。

**Print name 姓名:** \_\_\_\_\_

**Date 日期:** \_\_\_\_\_

**Signature 签名:** \_\_\_\_\_

## Appendix C

### Bilingual Informed Consent and Participant Rights – Teachers

#### **INTRODUCTION 介绍**

You are being invited to participate in this research study called “How the leaders of teacher learning groups facilitate group learning and reflective practice in Chinese public secondary schools.” You may qualify to take part in this research study because you are currently working at a public secondary school in the Guangdong province of mainland China, currently teaching subject matter courses on a regular basis, and currently participate in a school-based teaching and research activities (*jiaoyan huodong*) that are facilitated by the heads of Teaching Research Groups (TRGs) who participate in this study.

您被邀请参与此项研究，该研究主题为“中国公立初高中教师学习小组带头人是如何引领团队学习和实施反思性实践的？”。您有资格参加此项研究是因为您目前就职于中国大陆内广东省的一所公立中学，同时在一线教书，并参与学校的校本教研活动。

Approximately 40 people will participate in this study and it will take between 115 minutes to 175 minutes of your time to complete.

大约 40 人会参与到此项研究。您参与的时长大概在 115 分钟到 175 分钟之间。

#### **WHY IS THIS STUDY BEING DONE? 为什么要做此项研究？**

This study is being done to determine how school-based teaching and research activities (*jiaoyan huodong*) are facilitated by the leaders of teacher learning groups, and to discover the current state of reflective practice in a sample of school-based teaching and research activities (*jiaoyan huodong*).

进行这项研究的目的是探索教师学习小组带头人是如何引领校本教研活动的，以及反思性实践在校本教研活动中是如何实施的。

#### **WHAT WILL I BE ASKED TO DO IF I AGREE TO TAKE PART IN THIS STUDY?**

If you decide to participate, you will be observed by the principal investigator for two school-based teaching and research activities (*jiaoyan huodong*). The two observations will take approximately 30 minutes each.

如果您决定参与此项研究，研究员将会去旁听两次您参与的教研活动。每次观察时间大概在 30 分钟左右。

You will also be interviewed by the principal investigator either face-to-face, telephone, or online for 40 minutes. The interview will focus on your experiences of Teaching Research Groups (TRGs) (*jiaoyanzu*) and the leaders of teacher learning groups’ facilitation of reflective practice in your group. The interview will be audio recorded. If you do not wish to be audio recorded, you can still participate in this study, the researcher will just take hand notes. You will be given a pseudonym or false name/de-identified code in order to keep your identity confidential.

同时，研究员将会与您有一个 40 分钟左右的一对一采访。采访方式也许是面谈，或是通过电话，或是在线视频。此内容与您在教研组的经历相关，以及在校本教研活动中实施反思性实践的情况相关。研究员将会录音整个采访内容。如果您希望不被录音，您还可以继续参与此研究，研究员将只会在采访期间做笔记。为了让您的身份得到保密，研究员将会给您一个假名或代码。

Finally, you will be asked to complete three surveys. The first two surveys will ask you questions about your experience in working and learning in your group. The last survey will ask you demographic questions. The three surveys will take approximately 15 minutes in total to complete.

最后，研究员将会让您填写三份问卷。前两份问卷问题将会与您在团队工作和学习中的经历有关。最后一份问卷需要您填写一些基本信息。完成三份问卷的总时长大概是 15 分钟。

### **WHAT POSSIBLE RISKS OR DISCOMFORTS CAN I EXPECT FROM TAKING PART IN THIS STUDY? 参与此项研究，我可能会承担什么风险？**

Risks are no greater than would be experienced in holding conversations with others outside the group about your experience in working and learning supported by your group. However, some risks may include discomfort sharing your experiences with teaching. Participation in this research study is completely voluntary. You have the right to withdraw at any time or refuse to participate entirely without jeopardy to your career. 参加此研究的风险不会超过与小组外的其他人就您在教研组工作和经历进行对话时所产生的风险。然而，风险可能包括在分享您教学经历时的不安。参与此项研究是完全自愿的。您有权在任何时候退出或者拒绝参与。这个决定将不会危及到您的工作。

The principal investigator is taking precautions to keep your information confidential and prevent anyone from discovering or guessing your identity, such as using a pseudonym instead of your name and keeping all information on a password protected computer and locked in a file drawer.

研究员采取预防措施对您的信息进行保密，防止任何人发现到或推测出您的身份。这些措施包含使用假名而非您的真名，并将所有信息保存在一个有密码保护的电脑上，同时将文件锁在抽屉里。

### **WHAT POSSIBLE BENEFITS CAN I EXPECT FROM TAKING PART IN THIS STUDY? 参与此项研究对我有什么好处？**

There is no direct benefit to you for participating in this study. Participation may benefit the field of teacher professional development to better understand the best way to implement school-based teaching and research activities (*jiaoyan huodong*).

参与此项研究并无直接的好处。但您的参与将会让整个教师职业发展领域受益，更好地理解并实施校本教研活动。

**WILL I BE PAID FOR BEING IN THIS STUDY? 参与此项研究我会从中得到报酬吗?**

There is no direct compensation for participation in this study.  
参与此项研究您将不会获得酬劳。

**WHEN IS THE STUDY OVER? CAN I LEAVE THE STUDY BEFORE IT ENDS? 此项研究什么时候结束? 在研究结束前我可以退出吗?**

The study is over when you have completed the interview, observations and filled out the surveys. However, you can leave the study at any time even if you haven't finished.  
当研究员旁听了您所带领的教研活动，同时您在完成了采访和问卷后，您的参与就结束了。当然，即使您还没有完成整个参与过程，您也可以选择在任何时间退出。

**PROTECTION OF YOUR CONFIDENTIALITY 保密**

All data obtained from participants will be kept confidential and will only be reported in an aggregate format (by reporting only combined results and never reporting individual ones). Pseudonyms (fake names) will be used in analyzing data and reporting findings. No one other than the principal investigator listed below will have access to recordings or analyzed data, which will be collected and stored in a locked cabinet at the principal investigator's home. What is on the audio recording will be transcribed (written down), and then the audio recording will be destroyed.

所有收集的数据将会被严格保密，参与者的个人信息将不会出现在最终的论文中，只有整合的数据会在论文中出现。假名将用于分析数据和报告结果。除了研究员以外，不会有任何其他人有机会接触到所收集的数据和分析后的数据。这些数据将保存在研究员家中带锁的档案柜中。音频内容将会被转录（写下来），之后录音将会被销毁。

The principal investigator will hire professional transcriptionists to transcribe audio-recorded interviews. The professional transcriptionists will complete a Non-Disclosure (Confidentiality) Agreement.

研究员将会聘请专业的转录员来转录录音采访。专业的转录员将会在转录前签写一份保密协议。

For quality assurance, the study team, the study sponsor (grant agency), and/or members of the Teachers College Institutional Review Board (IRB) may review the data collected from you as part of this study. Otherwise, all information obtained from your participation in this study will be held strictly confidential and will be disclosed only with your permission or as required by U.S. or State law.

为了保证质量，研究团队，或者研究发起人，和/或哥伦比亚大学教师学院的“审查委员会”（人类研究伦理委员会）可能会查看收集的数据。除此之外，您参与此研究所获得的信息将被严格保密。只有在您的允许或者美国法律、州的法律要求情况下才会公开。



**HOW WILL THE RESULTS BE USED? 研究结果将会被如何使用?**

This study is being conducted as part of the dissertation of the principal investigator. The results of this study might be published in journals and presented at academic conferences. Your identity will be removed from any data you provide before publication or use for educational purposes.

此项研究是研究员博士论文中的一部分。研究结果可能会发表在期刊上，并在学术会议上发表。不管是用于发表或其他教育目的，在使用之前，您的身份将会从数据中删除。

**CONSENT FOR AUDIO RECORDING? 是否同意被录音?**

Audio recording is part of this research study. You can choose whether to give permission to be recorded. If you decide that you don't wish to be recorded, you will still be able to participate in this study.

音频录制是此项研究的一部分。您可以选择是否允许被录音。如果您不希望被记录下来，您仍然可以参加此项研究。

\_\_\_\_\_ I give my consent to be recorded 我同意被录音

Signature 签名:

\_\_\_\_\_

\_\_\_\_\_ I do not consent to be recorded 我不同意被录音

Signature 签名:

\_\_\_\_\_

**WHO MAY VIEW MY PARTICIPATION IN THIS STUDY 谁可以看到我参与此项研究?**

\_\_\_\_\_ I consent to allow written and/or audio recorded materials viewed at an educational setting or at a conference outside of Teachers College 我同意书面和/或音频录制的资料在哥伦比亚大学教师学院以外的教育场所或会议上被查看。

Signature 签名:

\_\_\_\_\_

\_\_\_\_\_ I do not consent to allow written and/or audio recorded materials viewed outside of Teachers College Columbia University 我不同意书面和/或音频录制的资料在哥伦比亚大学教师学院以外的教育场所或会议上被查看。

Signature 签名:

\_\_\_\_\_

**OPTIONAL CONSENT FOR FUTURE CONTACT 是否同意未来再与您联系?**

The investigator may wish to contact you in the future. Please initial the appropriate statements to indicate whether or not you give permission for future contact.

研究员可能希望在未来与您取得联系。请您用姓名的首字母签名来标明您是否允许未来与您取得联系。

I give permission to be contacted in the future for research purposes:

我同意在未来与我有与研究为目的的进行联系。

Yes 是 \_\_\_\_\_ No 否 \_\_\_\_\_

Initial 用姓名的首字母签名

Initial 用姓名的首字母签名

I give permission to be contacted in the future for information relating to this study:

我同意在未来针对此项研究相关的信息与我进行联系。

Yes 是 \_\_\_\_\_ No 否 \_\_\_\_\_

Initial 用姓名的首字母签名

Initial 用姓名的首字母签名

### **WHO CAN ANSWER MY QUESTIONS ABOUT THIS STUDY? 谁可以回答我针对此项研究持有的问题?**

If you have any questions about taking part in this research study, you should contact the principal investigator, Ms. Xuejiao Lin, at [cindy.lin@tc.columbia.edu](mailto:cindy.lin@tc.columbia.edu) or at 617-999-0500. You can also contact the faculty advisor, Dr. Victoria Marsick at [marsick@exchange.tc.columbia.edu](mailto:marsick@exchange.tc.columbia.edu).

如果您对参与此项研究有任何疑问，请联系本研究的主要研究员林雪娇女士，[cindy.lin@tc.columbia.edu](mailto:cindy.lin@tc.columbia.edu)，或电话 617-999-0500。您也可以联系该博士导师 Marsick 博士，[marsick@exchange.tc.columbia.edu](mailto:marsick@exchange.tc.columbia.edu)。

If you have questions or concerns about your rights as a research subject, you should contact the Institutional Review Board (IRB) (the human research ethics committee) at 212-678-4105 or email [IRB@tc.edu](mailto:IRB@tc.edu). Or you can write to the IRB at Teachers College, Columbia University, 525 W. 120<sup>th</sup> Street, New York, NY 10027. The IRB is the committee that oversees human research protection for Teachers College, Columbia University.

如果您对您作为研究对象有任何疑问或者顾虑，请您联系“审查委员会”（人类研究伦理委员会），[电话 212-678-4105 或者邮箱 IRB@tc.edu](tel:212-678-4105)。您也可以写信给哥伦比亚大学教师学院的“审查委员会”，地址是 525 W. 120<sup>th</sup> Street, New York, NY 10027。“审查委员会”是负责监督哥伦比亚大学教师学院人类研究保护的委员会。

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## **PARTICIPANT'S RIGHTS**

### **参与者的权利**

- I have read and discussed the informed consent with the researcher. I have had ample opportunity to ask questions about the purposes, procedures, risks and benefits regarding this research study. 我已经阅读并与研究员讨论了知情同意书的内容。我曾有充分的机会询问有关此项研究的目的、程序、风险和益处。
- I understand that my participation is voluntary. I may refuse to participate or withdraw participation at any time without penalty to future employment. 我明白我的参与是自愿性质的。我可以在任何时候拒绝参与或退出参与，此行为不会影响到我的工作。
- The researcher may withdraw me from the research at his or her professional discretion. 研究员可以根据她的专业判断让我退出研究。
- If, during the course of the study, significant new information that has been developed becomes available which may relate to my willingness to continue my participation, the investigator will provide this information to me. 在参与研究期间，如果有重要的新信息会影响我继续参与研究的意愿，研究员将会向我提供这些信息。
- Any information derived from the research study that personally identifies me will not be voluntarily released or disclosed without my separate consent, except as specifically required by law. 从研究中获得的任何与我相关的信息，都不会在未经被人同意的情况下公布或披露，除非法律明确规定。
- Identifiers may be removed from the data. De-identifiable data may be used for future research studies, or distributed to another investigator for future research without additional informed consent from the subject or the representative. 标识符将从数据中删除。无标识符的数据可能被用于未来的研究，或派发给另外一位研究员以供今后的研究，这个行为将不需要获得该参与者的进一步知情同意。
- I should receive a copy of the Informed Consent document. 我将会收到一份知情同意书的副本。

**My signature means that I agree to participate in this study** 我的签名代表我同意参与此研究。

**Print name 姓名:** \_\_\_\_\_

**Date 日期:** \_\_\_\_\_

**Signature 签名:** \_\_\_\_\_

## Appendix D

## Bilingual Demographic Inventory – School Leaders

The information collected from this inventory is completely confidential and will be used for the purpose of this research study.

本表格收集的所有信息将会被严格保密，只用于此研究当中。

1. Age 年龄:
  - ☐ Less than 24
  - ☐ 25-29
  - ☐ 30-34
  - ☐ 35-39
  - ☐ 40-44
  - ☐ 45-49
  - ☐ Above 50
2. Gender 性别:
  - ☐ Female 女
  - ☐ Male 男
3. Position Title 职位名称: \_\_\_\_\_
4. Teaching Subject (if any) 现教授的学科（如果有）: \_\_\_\_\_
5. Highest degree level 最高学历:
  - ☐ Doctorate 博士
  - ☐ Masters 硕士
  - ☐ Bachelors 本科
  - ☐ Other, please specify 其他，请说明\_\_\_\_\_
6. Institution of the highest degree level 获得最高学历的院校是: \_\_\_\_\_
7. Years of teaching experience 教龄: \_\_\_\_\_
8. Years of serving as a school leader in this school 在此学校担任校领导职位的年数: \_\_\_\_\_
9. Years of serving as a school leader in other schools, if any 在其他学校担任校领导职位的年数（如果有）: \_\_\_\_\_

## Appendix E

## Bilingual Demographic Inventory – LPG Group Leaders

The information collected from this inventory is completely confidential and will be used for the purpose of this research study.

本表格收集的所有信息将会被严格保密，只用于此研究当中。

## 1. Age 年龄:

- ☐ Less than 24
- ☐ 25-29
- ☐ 30-34
- ☐ 35-39
- ☐ 40-44
- ☐ 45-49
- ☐ Above 50

## 2. Gender 性别:

- ☐ Female 女
- ☐ Male 男

## 3. Teaching Subject 现教授的学科: \_\_\_\_\_

## 4. Highest degree level 最高学历:

- ☐ Doctorate 博士
- ☐ Masters 硕士
- ☐ Bachelors 本科
- ☐ Other, please specify 其他, 请说明\_\_\_\_\_

## 5. Institution of the highest degree level 获得最高学历的院校是:

\_\_\_\_\_

## 6. Years of teaching experience 教龄: \_\_\_\_\_

## 7. Length of time served as the leader 担任此备课组长的时长:

\_\_\_\_\_

## 8. Relevant training (if any) 所接受过与备课组长相关培训: \_\_\_\_\_

## 9. Other school duties and administrative position in the school 在学校担任的其他职务有哪些 (例如: 班主任、学科组长等):

\_\_\_\_\_

## Appendix F

## Bilingual Demographic Inventory – Teachers

The information collected from this inventory is completely confidential and will be used for the purpose of this research study.

本表格收集的所有信息将会被严格保密，只用于此研究当中。

## 1. Age 年龄:

- ☐ Less than 24
- ☐ 25-29
- ☐ 30-34
- ☐ 35-39
- ☐ 40-44
- ☐ 45-49
- ☐ Above 50

## 2. Gender 性别:

- ☐ Female 女
- ☐ Male 男

## 3. Teaching Subject 现教授的学科: \_\_\_\_\_

## 4. Highest degree level 最高学历:

- ☐ Doctorate 博士
- ☐ Masters 硕士
- ☐ Bachelors 本科
- ☐ Other, please specify 其他, 请说明\_\_\_\_\_

## 5. Institution of the highest degree level 获得最高学历的院校是:

\_\_\_\_\_

## 6. Years of teaching experience 教龄: \_\_\_\_\_

## 7. Length of time served as a member in this teacher learning group 参与此备课组的时长: \_\_\_\_\_

## 8. Other school duties and administrative position in the school 在学校担任的其他职务有哪些（例如：班主任、学科组长等）:

\_\_\_\_\_

## Appendix G

## Bilingual Group Learning Survey

**Instruction:** Please select the most accurate response based on your experience in the Lesson Preparation Group by placing a check mark next to your response.

说明：请针对您目前在备课组的经历，选择出最贴近真实情况的选项。请在该选项上打勾。

	在我们的备课组中... In our Lesson Preparation Group...	Firmly Agree	Moderately Agree	Slightly Agree	Neither Agree nor Disagree	Slightly Disagree	Moderately Disagree	Firmly Disagree
1.	教学水平的提高是备课组的成果之一。 The outcomes from participating the teacher learning groups include performance improvements.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
2.	备课组老师有彼此分享个人见解和学习成果。Members share the results of their personal insights or learning with one another.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
3.	我们有尝试新的教学方法，并从中获得经验。We often learn through trying out new behaviors.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
4.	我们有结合他人的观点产生新的观点。We build upon on another's ideas.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
5.	备课组老师们没有被给予机会去确立小组目标。Members do not have the opportunity to define and develop the group's objectives.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
6.	我们需要在完成任务和维持成员的关系中寻找平衡。We find that we need to balance getting the task accomplished with building relationship among members.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
7.	备课组合作的成果中包含我能尝试的新的教学方法。The end products of our work include new approaches to how I teach.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
8.	我意识到，除了在课堂上发生的事情，学校的整体成绩也很重要。I realized that in addition to what happens in our classrooms, school results are also important.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
9.	备课组老师们有（不断）对自己和他人的看法做出改变。We change our perspectives about ourselves and others.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
10.	备课组中的老师们有试图去理解彼此的观点。We try to understand one another's viewpoints.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意

11.	我感觉没有重视让大家说出自己的想法。Speaking one's mind is not valued.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
12.	在开始完成任务前, 备课组老师有足够的时间了解彼此。Members take sufficient time to get to know each other before working on the task.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
13.	新的思维方式的产生是备课组的成果之一。The outcomes of our work include new ways of thinking.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
14.	我们会经常根据备课组外的人提供的新信息来改变我们备课组对以往观点的看法。We often revise our viewpoints based on input or new information from others outside the group.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
15.	备课组活动会促使老师们在教学中尝试新方法。Members try out new approaches to their teaching as a result of the group's work.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
16.	大多数备课组老师对新的观点和思维方式保持开放的态度。Most members are open to new ideas or ways of thinking.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
17.	备课组老师不愿意表达他们对改革、对变化的负面感受。People do not feel free to express their negative feelings about changes.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
18.	我们共同建立观点, 价值观和指导方针。We are developing opinions, values, and guiding principles.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
19.	新的团队合作方法的产生是备课组的成果之一。The outcomes of our work include new practices for working together.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
20.	与自己独立完成工作相比, 这种合作的方式为我们每个人带来了更好的学习效果。The act of working collaboratively results in greater learning for each of us than if we had worked alone.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
21.	在分析问题和做决定时, 我们通常会结合大多数备课组老师的意见。We generally incorporate the perspectives of most members in analyzing problems and making decisions.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
22.	备课组老师有从多个角度来审视问题。We look at issues from multiple perspectives.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
23.	备课组有在明确目标和搭建框架上花了很多时间。We spend much time gaining clarity around our purpose and structure.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
24.	产生新的管理方法是备课组的成果之一。The outcomes of our work include new ways of managing.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
25.	我们时常发现通过团队共同讨论, 我们对问题的看法会发生改变。We often find	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意



	that our views of the problem change as a result of our group discussion.							
26.	我们邀请备课组外的人来分享信息或与我们一起进行讨论。We invite people from outside the group to present information or have discussions with us.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
27.	团队努力的结果胜过了个人成就。Group effort is valued over individual achievement.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
28.	我们会讨论我们的感受和想法。We discuss our feelings as well as our thoughts.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
29.	团队互动与学习带给我的最终教学质量比我单独一个人研究的质量要好。The end products of my teaching are better quality than if I didn't interact with the group.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
30.	备课组老师会倾听组内每个人的观点。We listen to the perspectives of every member in the group.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
31.	我们通常根据备课组以外的人提供的信息来改变我们以往的观点。We generally revise our viewpoints based on input or new information from others outside our group.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
32.	大多数备课组老师可以清晰的表达自己的想法。Most members are able to express their thoughts clearly.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
33.	我会以不同的方式来处理我的教学过程和方法。I organize my teaching process and procedures differently.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
34.	当备课组老师看到组内其他老师做出行为改变时，他们也会改变自己的行为。Members change their behavior as a result of seeing changes in behaviors by other group members.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
35.	我们与组外的人分享我们从自己备课组内中学到的东西。We share what we learn from our group with others outside the group.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
36.	我们试图彼此扬长补短。We try to capitalize on each other's strengths and compensate for one another's weaknesses.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
37.	备课组老师会对正在讨论的问题的想法和观念进行质疑。We challenge our basic beliefs or assumptions about the issues under discussion.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
38.	我们通过从外部获取更多的信息来增加我们备课组的知识储备。We increase our knowledge base by going outside of our group for information.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意
39.	备课组老师有感受到彼此的重视和赞赏。Members feel valued and appreciated by one another.	非常同意	比较同意	少许同意	既不同意也不反对	少许不同意	比较不同意	非常不同意

## Appendix H

## Bilingual Reflection Questionnaire

Instruction: Please select the most accurate response based on your experience in the Lesson Preparation Group by placing a check mark next to your response.

说明：请针对您目前在备课组的经历，选择出最贴近真实情况的选项。请在该选项上打勾。

		Definitely Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat disagree	Definitely Disagree
1.	当我在参加备课组活动时，我不需要做什么思考，按部就班就好了。When I am working on some activities, I can do them without thinking about what I am doing.	非常同意	比较同意	既不同意也不反对	比较不同意	非常不同意
2.	我需要去理解备课组长所讲的概念。This Lesson Preparation Group requires me to understand concepts taught by the leaders.	非常同意	比较同意	既不同意也不反对	比较不同意	非常不同意
3.	我有时会质疑他人做事的方法，并试图想出更好的方法。I sometimes question the way others do something and try to think of a better way.	非常同意	比较同意	既不同意也不反对	比较不同意	非常不同意
4.	我有从参加备课组会中改变了对自己的一些看法。As a result of this Lesson Preparation Group I have changed the way I look at myself.	非常同意	比较同意	既不同意也不反对	比较不同意	非常不同意
5.	在备课组中，我们重复做一件事情很多次，所以我开始在不思考的情况下做这些事情了。In this Lesson Preparation Group, we do things so many times that I started doing them without thinking about it.	非常同意	比较同意	既不同意也不反对	比较不同意	非常不同意
6.	为了成功完成备课组布置的任务，我需要了解新的内容（例如：想法，概念，教学实践）。To successfully do the work assigned in this Lesson Preparation Group, I need to understand the new content (eg. ideas, concepts, practices).	非常同意	比较同意	既不同意也不反对	比较不同意	非常不同意
7.	我不但愿意思考如何做好手里的事情，而且会想用不同的方法去做。I like to think over what I have been doing and consider alternative ways of doing it.	非常同意	比较同意	既不同意也不反对	比较不同意	非常不同意
8.	参加备课组活动有让我对我一些固有的想法产生质疑。This Lesson Preparation Group has challenged some of my firmly held ideas.	非常同意	比较同意	既不同意也不反对	比较不同意	非常不同意

9.	我不需要学习新东西或思考太多就可以来完成备课组的任务。The work of this Lesson Preparation Group doesn't require me to learn something new or think too much to accomplish the tasks in this group.	非常同意	比较同意	既不同意也不反对	比较不同意	非常不同意
10.	我需要理解备课组会中所提供的内容并将它应用到我的教学实践当中。I need to understand the information presented at this Lesson Preparation Group to apply it to my teaching practice.	非常同意	比较同意	既不同意也不反对	比较不同意	非常不同意
11.	我经常会反思、改善我的行为。I often reflect on my actions to see whether I could have improved on what I did.	非常同意	比较同意	既不同意也不反对	比较不同意	非常不同意
12.	通过参加备课组会，我改变了一些以往做事的方式。As a result of this Lesson Preparation Group I have changed my normal way of doing things.	非常同意	比较同意	既不同意也不反对	比较不同意	非常不同意
13.	如果我遵循备课组长的指示，我就不需要过多的思考这个备课组的内容。If I follow what the leader says, I do not have to think too much on this Lesson Preparation Group.	非常同意	比较同意	既不同意也不反对	比较不同意	非常不同意
14.	在这个备课组中，我必须不断地思考备课组长所讲述和提出的内容。In this Lesson Preparation Group, I have to continually think about the material that is being presented by the leader.	非常同意	比较同意	既不同意也不反对	比较不同意	非常不同意
15.	我经常反思自己的教学经历，并从中学习，为下一次的教学做出改进。I often reexamined my experience so I can learn from it and improve for my next teaching.	非常同意	比较同意	既不同意也不反对	比较不同意	非常不同意
16.	通过参加备课组会，我有发现我以前认为是对的但其实是错误的。From this Lesson Preparation Group, I discovered faults in what I had previously believed to be right.	非常同意	比较同意	既不同意也不反对	比较不同意	非常不同意

Appendix I

Observation Protocol

Time Stamped	Recorded observations	Observer's reflections
Questions		

## Appendix J

## Interview Protocol - LPG Group Leaders

Time of interview:

Date:

Place:

Interviewee:

Position of Interviewee:

Recording information about interview:

**Introduction**

- ☐ Introduce myself
- ☐ Discuss the purpose of the study
- ☐ Get informed consent signature (if haven't done so)
- ☐ Provide structure of the interview (audio recording, taking notes)
- ☐ Ask if interviewee has questions
- ☐ Define terms, if necessary

**Interview Content Questions**

1. What are your responsibilities as a leader? What are the tasks you need to complete? 您作为备课组长的职责有哪些? 需要完成哪些任务?
2. What are your goals of being a leader? 作为备课组长, 您有哪些目标?
3. What steps do you take to prepare for the school-based teaching and research activities? Could you please provide several examples? 在准备备课组活动时, 您一般会经历哪些步骤? 可否举例?
4. Provide examples about what happens when you meet together. 请举例: 当老师们在参加备课组会时会做些什么。

*Probes 探索:*

- What steps do you take when you have a discussion? 讨论时有哪些步骤?
- What topics do you discuss? 具体讨论哪些主题?
- What type of questions you ask? 针对这类主题, 您一般会抛出哪些问题让大家展开讨论?
- What happens with those ideas? 当有了不同想法以后呢?
- Is there anything you wish you would have done differently when holding a discussion? 有哪些是您希望在进行讨论时做的不同的吗?
- What are the things you want to talk about during these sessions? 您希望在备课组会上讨论什么?
- How would you want to talk about it? 你希望以什么样的方式进行讨论?
- What are the things you don't want to talk about? 您觉得哪些内容不应该在备课组会上讨论?

5. Describe the first time you met and how it's different now. 请描述您们第一次一起活动时的场景，以及现在和当时的不同点。

*Probes 探索:*

- What factors made the different? 哪些因素促进了变化的发生?
6. Describe a situation in which your group worked together to solve a teaching challenge. 请描述一个您们一起共同突破教学难点相关问题的例子。

*Probes 探索:*

- What was the challenge? 具体是个什么教学难点?
  - What did you say in the group? 您说了哪些?
  - How did the group members respond? 其他老师做出了什么回应和反应?
  - How did the challenge get resolved? With what outcomes? 这个难点是如何解决的? 结果如何?
  - Is there anything you wish you (or others) would have done differently? 有没有什么您希望做的不同的地方?
7. As you think of your experiences since you started this role, can you describe a best experience (e.g. a repeatable experience)? 回想一下从开始担任这个角色到现在，可否描述一个最好的经历?

*Probes 探索:*

- When did this occur? 什么时候发生的?
  - Where did this occur? 在哪里发生的?
  - What factors made it the best experience? 哪些因素让这个事情成为了一个最好的经历?
  - Did you learn anything about your role from this experience? If yes, what did you learn? 作为组长，从这件事情中学到了什么吗？如果有的话，请问是什么？
8. What advice would you give to someone stepping into the role of leading a group based on your own experience? 如果让您给将要成为备课组长提个建议，您会提哪些建议？

#### **Closing:**

- ☐ Thank the individual for participating
- ☐ Assure confidentiality
- ☐ If needed, request further interview
- ☐ If asked, comment on how he/she will receive results of the study

## Appendix K

### Interview Protocol - Teachers

Time of interview:

Date:

Place:

Interviewee:

Position of Interviewee:

Recording information about interview:

#### Introduction

- ☐ Introduce myself
- ☐ Discuss the purpose of the study
- ☐ Get informed consent signature (if haven't done so)
- ☐ Provide structure of the interview (audio recording, taking notes)
- ☐ Ask if interviewee has questions
- ☐ Define terms, if necessary

#### Interview Content Questions

1. What do you understand are the purposes and goals of the school-based teaching and research activities? 您理解的备课组活动的目的和目标有哪些?  
*Probe:* do you have any goals that differ from what the school promotes? If so, what are they? 探索: 您有哪些目标是和学校鼓励的有出入的吗? 如果有的话, 是什么?
2. How well do you think your group is achieving these goals? 您认为您的小组在实现这些目标的实现得如何?
3. What does the leader do when the group encounters a teaching difficulty? 当遇到的挑战时, 备课组长是如何做的?
4. What usually happens when you meet together? 请举例: 当老师们在参加教师学习小组活动时会有什么。

Probes 探索:

- What steps do you take when you have a discussion? 讨论时有哪些步骤?
- What topics do you discuss? 具体讨论哪些主题?
- What type of questions you ask? 针对这类主题, 您一般会抛出哪些问题让大家展开讨论?
- What happens with those ideas? 当有了不同想法以后呢?
- Is there anything you wish you would have done differently when holding a discussion? 有哪些是您希望在进行讨论时做的不同的吗?
- What are the things you want to talk about during these sessions? 您希望在备课组会上讨论什么?
- How would you want to talk about it? 你希望以什么样的方式进行讨论?

- What are the things you don't want to talk about? 您觉得哪些内容不应该在备课组会上讨论?
- 5. In General: When does reflection happen in your teaching practices? 一般对教学的反思发生在什么时候?
- 6. In Lesson Preparation Group: Do you reflect on past teaching events during these activities? When and how do you reflect in this group? How often? 在备课组会上有机会对过去的教学事件进行反思吗? 如果有的话, 多久一次? 如果有, 多长时间一次? 一般这种反思相关的讨论会在什么情况下发生?
- 7. Describe a situation in which your group worked together to solve a teaching challenge. 请描述一个您们一起共同突破教学难点相关问题的例子。

*Probes 探索:*

- What was the challenge? 具体是个什么教学难点?
- What did you say in the group? 您说了哪些?
- How did the group members respond? 其他老师做出了什么回应和反应?
- How did the challenge get resolved? With what outcomes? 这个难点是如何解决的? 结果如何?
- Is there anything you wish you (or others) would have done differently? 有没有什么您希望做的不同的地方?
- 8. Describe a best experience. 请描述一个最好的经历。

*Probes 探索:*

- When did this occur? 什么时候发生的?
- Where did this occur? 在哪里发生的?
- What factors made it the best experience? 哪些因素让这个事情成为了一个最好的经历?

### **Closing:**

- ☐ Thank the individual for participating
- ☐ Assure confidentiality
- ☐ If needed, request further interview
- ☐ If asked, comment on how he/she will receive results of the study



## Appendix L

### Interview Protocol - School Leaders

Time of interview:

Date:

Place:

Interviewee:

Position of Interviewee:

Recording information about interview:

#### Introduction

- ☐ Introduce myself
- ☐ Discuss the purpose of the study
- ☐ Get informed consent signature (if haven't done so)
- ☐ Provide structure of the interview (audio recording, taking notes)
- ☐ Ask if interviewee has questions
- ☐ Define terms, if necessary

#### Interview Content Questions

1. What do you understand are the purposes and goals of the school-based teaching and research activities? 您理解的备课组活动的目的和目标有哪些?
2. What do you expect the leaders of teacher learning groups to do in the school-based teaching and research activities? How do you communicate the expectation(s)? 您期待备课组长在备课组活动中做些什么? 您是如何将这个期待传达下去的?
3. How do you assign these leaders? What are the selection criteria? 备课组长是如何被指派的? 有哪些选择标准?
4. Do the leaders of teacher learning groups receive training before starting their role? If so, what type of training? 备课组长在担任这个职位前有接受过什么培训吗? 如果有的话, 什么类型的培训?
5. Reflection 反思:

*Probes 探索:*

- How do you define reflection? What are the behaviors, actions, and attitudes signal that reflection is happening? 您是如何定义“反思”的? 有哪些行为, 行动和态度标志老师们在反思?
- How do you know whether the teachers are reflecting? 您是如何了解您的老师们是否有对教学进行反思?
- How important is it to you that leaders of Lesson Preparation Groups support reflection among teachers? How do you communicate this importance? 您认为备课组长在支持教师进行反思这件事有多重要? 您是如何将这个重要性传达下去的?
- (Optional) What do you hope to change in a result of the reflection? 你希望教师从反思中做出什么样的改变?

6. What do you do to promote the importance of the leaders? What do you think the importance or value of the school-based teaching and research activities in your school? 您是如何强调教研组的重要性的? 您认为校本教研活动在您学校的重要性或价值对您学校有什么影响?
7. How do you support the leaders of Lesson Preparation Groups in their work? 您日常是如何支持备课组长的工作的?
8. What evaluation in place to determine the quantity and quality of reflection occurs in these groups? 您使用什么样的衡量标准来衡量老师们在备课组会中反思的数量、质量和程度的? 您会特别注意哪些细节?
9. Is there anyone else you recommend me to interview on this perspective? 关于这些问题, 有哪些其他人您推荐我去和他们了解的吗?

**Closing:**

- ☐ Thank the individual for participating
- ☐ Assure confidentiality
- ☐ If needed, request further interview

## Appendix M

## Bilingual Coding Scheme

Perception on Tasks 对任务的理解	Make semester plan 制定学期计划 Plan teaching content 安排教学内容 Unify teaching progress 统一教学进度 Delegate tasks 分配任务 Discuss teaching difficulties 讨论教学难点 Discuss teaching strategies 讨论教学方法
Meeting Preparation 备课组会的准备	Preview next week 预览下周内容 Identify teaching difficulties 找到教学难点 Preview homework 计划学生作业
Reflection Moments Mentioned by Group Leaders and Teachers 备课组长和老师提到的教学 反思的契机	Self-dependent 靠个人 Open lesson debrief sessions 公开课评课 Post-exam analysis 试卷分析 Teaching plan booklet 教案 Recent teaching difficulties 近期教学难点 Discussion outside of LPG meetings 组会外讨论
Reflection in LPG Meetings 备课组会中的反思	Happen rarely in LPG meetings 很少在组会中发生 Post-exam analysis 试卷分析 Open lesson debrief sessions 公开课评课 Not essential 不是核心 Teaching difficulties 教学难点
Discussion Content in LPG Meetings 备课组会的讨论内容	Teaching progress 教学进度 Teaching content 教学内容 Teaching strategies 教学方法 Teaching difficulties 教学难点 Students' assignments 学生作业 Delegate tasks 分配任务 Central topic discussion 主题讨论
Discussion Format in LPG Meetings 备课组会的形式	Central speaker 中心发言人 Free talk 自由发言
Challenges in LPG Meetings 备课组会的挑战	Lack of preparation on the topic 对讨论内容准备不足 Lack of effective strategies sharing 缺乏有效教学策略分享 Lack of in-depth discussion 缺乏深度的讨论 Lack of execution 落实不够 Elder age group 年龄层偏大 Group members take for granted 组员理所因当 Do nothing even after requested 要求了也不会做 Young teacher cannot request elder teacher do things 年轻老师不能要求老教师做事情
Memorable Experience Factors 难忘经历的因素	Participate in discussion 参与讨论 Receive constructive feedback 获取建设性反馈 Active participation 积极参与 Aha moment 顿悟时刻

	<p>Rich content 内容丰富</p> <p>Willing to share 愿意分享</p> <p>Different opinions 不同见解</p> <p>Clear goal 目标清晰</p> <p>Relevant to the participants 内容与自身相关</p>
<p>Expected Reflection Moments Mentioned by School Leaders 校领导期待的教学反思契机</p>	<p>In LPG meeting 备课组会中</p> <p>Open lesson 公开课</p> <p>Teaching plan booklet 教案</p> <p>Post-exam analysis 试卷分析</p> <p>End-semester report 期末总结</p> <p>Students' evaluation 学生评价</p>
<p>Assessment of Reflection 衡量教学反思的标准</p>	<p>No assessment 无衡量标准</p> <p>Written teaching reflection report 教学反思报告</p>
<p>Selection of LPG Group Leaders 备课组长的选拔</p>	<p>Willing to do things 愿意做事</p> <p>Performance above average 教学业绩中上</p> <p>Not arrogant 不自大</p> <p>Experienced 有经验</p> <p>Role model of others 起到示范作用</p> <p>Younger ages 年轻一点</p> <p>Enough energy and strength 有精力和体力</p>
<p>Training for LPG Group Leaders 备课组长的培训</p>	<p>Exam related 与考试相关</p> <p>No training 无培训</p>

## Appendix N

## Demographic Profile of Study Participants Among All Groups

Group Code	Group Size	Subject	Grade	Role	Age Group	Gender	Years of Teaching	Data Methods
G1. S1	7	English	10	Group Leader	35-39	M	16	Interview & Observation
				Teacher	> 50	F	33	Interview & Observation
				Teacher	45-49	F	26	Interview & Observation
				Teacher	35-39	F	14	Observation only
				Teacher	35-39	F	16	Observation only
				Teacher	> 50	F	35	Observation only
G2. S1	10	English	12	Group Leader	35-39	M	15	Interview & Observation
				Teacher	> 50	F	28	Interview & Observation
G3. S1	7	Chinese	10	Group Leader	40-44	F	17	Interview & Observation
				Teacher	> 50	F	32	Interview & Observation
G4. S1	9	Chinese	12	Group Leader	35-39	F	13	Interview & Observation
				Teacher	> 50	M	30	Interview & Observation
				Teacher	35-39	F	16	Interview & Observation
G5. S1	3	Chemistry	10	Group Leader	> 50	F	30	Interview & Observation
				Teacher	< 24	M	0	Interview & Observation
				Teacher	30-34	F	5	Interview & Observation
G6. S1	5	Chemistry	12	Group Leader	40-44	F	20	Interview & Observation
				Teacher	> 50	M	32	Interview & Observation
				Teacher	45-49	F	21	Interview & Observation
				Teacher	> 50	F	34	Observation only
				Teacher	35-39	F	14	Observation only
G7. S1	3	Biology	10	Group Leader	> 50	M	32	Interview & Observation
				Teacher	> 50	F	30	Interview & Observation
G8. S1	6	Geography	12	Group Leader	35-39	F	17	Interview & Observation
				Teacher	40-44	F	17	Interview & Observation
				Teacher	35-39	F	12	Interview & Observation
G9. S2	19	English	10	Group Leader	45-49	F	26	Interview & Observation
				Teacher	30-34	F	9	Interview & Observation
				Teacher	<i>Didn't provide</i>	<i>Didn't provide</i>	<i>Didn't provide</i>	Interview & Observation
				Teacher	25-29	F	5	Observation only
				Teacher	30-34	F	10	Observation only
				Teacher	25-29	F	2 months	Observation only
				Teacher	25-29	F	<i>Didn't provide</i>	Observation only
				Teacher	30-34	M	<i>Didn't provide</i>	Observation only
				Teacher	<i>Didn't provide</i>	<i>Didn't provide</i>	<i>Didn't provide</i>	Observation only
				Teacher	25-29	F	1.5 month	Observation only
				Teacher	25-29	F	<i>Didn't provide</i>	Observation only
				Teacher	25-29	F	2 months	Observation only
				Teacher	< 24	F	2 months	Observation only

Group Code	Group Size	Subject	Grade	Role	Age Group	Gender	Years of Teaching	Data Methods
				Teacher	30-34	F	<i>Didn't provide</i>	Observation only
G10. S2	11	English	11	Group Leader	30-34	F	7	Interview & Observation
				Teacher	25-29	F	5	Interview & Observation
				Teacher	25-29	F	7	Interview & Observation
				Teacher	25-29	M	1	Observation only
				Teacher	35-39	F	11	Observation only
				Teacher	30-34	F	8	Observation only
				Teacher	35-39	F	12	Observation only
G11. S2	4	Biology	12	Group Leader	30-34	F	8	Interview & Observation
				Teacher	<i>Didn't provide</i>	M	<i>Didn't provide</i>	Interview & Observation

## Appendix O

## Item Analysis of Group Learning Survey

Components and Items (Range of Responses: 1= lowest, 7=highest)	Sum (N=41)	Mean	Standard Deviation
Team Learning Outcomes (Range of Scores:34-56)	2025	49.39	5.81
Q1. The outcomes from participating the teacher learning groups include performance improvements.	273	6.66	0.57
Q7. The end products of our work include new approaches to how I teach.	254	6.20	1.05
Q13. The outcomes of our work include new ways of thinking.	238	5.80	1.44
Q19. The outcomes of our work include new practices for working together.	249	6.07	1.17
Q24. The outcomes of our work include new ways of managing.	222	5.41	1.36
Q29. The end products of my teaching are better quality than if I didn't interact with the group.	259	6.32	0.79
Q33. I organize my teaching process and procedures differently.	263	6.41	0.71
Q36. We try to capitalize on each other's strengths and compensate for one another's weaknesses.	267	6.51	0.60
Team Learning Processes: Framing & Reframing (Range of Scores: 10-21)	700	17.07	2.58
Q14. We often revise our viewpoints based on input or new information from others outside the group.	212	5.17	1.73
Q25. We often find that our views of the problem change as a result of our group discussion.	250	6.10	0.74
Q37. We challenge our basic beliefs or assumptions about the issues under discussion.	238	5.80	1.03
Team Learning Processes: Crossing Boundaries (Range of Scores:21-35)	1225	29.88	3.39
Q20. The act of working collaboratively results in greater learning for each of us than if we had worked alone.	265	6.46	0.71
Q26. We invite people from outside the group to present information or have discussions with us.	237	5.78	1.06
Q34. Members change their behavior as a result of seeing changes in behaviors by other group members.	235	5.73	1.03
Q35. We share what we learn from our group with others outside the group.	232	5.66	1.17
Q38. We increase our knowledge base by going outside of our group for information.	256	6.24	0.70
Team Learning Processes: Experimenting (Range of Scores: 6-14)	516	12.59	1.64
Q3. We often learn through trying out new behaviors.	261	6.37	0.73
Q15. Members try out new approaches to their teaching as a result of the group's work.	255	6.22	1.01
Team Learning Processes: Integrating Perspectives (Range of Scores: 38-56)	1543	37.63	3.10
Q2. Members share the results of their personal insights or learning with one another.	272	6.63	0.54
Q8. I realized that in addition to what happens in our classrooms, school results are also important.	274	6.68	0.52
Q9. We change our perspectives about ourselves and others.	245	5.98	0.85
Q21. We generally incorporate the perspectives of most members in analyzing problems and making decisions.	263	6.41	0.63
Q30. We listen to the perspectives of every member in the group.	271	6.61	0.59

Q31. We generally revise our viewpoints based on input or new information from others outside our group.	218	5.32	1.35
Team Learning Conditions: Team Appreciation (Range of Scores: 38-56)	2091	51.00	4.40
Q4. We build upon on another's ideas.	267	6.51	0.60
Q10. We try to understand one another's viewpoints.	258	6.29	0.75
Q16. Most members are open to new ideas or ways of thinking.	253	6.17	0.97
Q22. We look at issues from multiple perspectives.	262	6.39	0.63
Q27. Group effort is valued over individual achievement.	256	6.24	0.83
Q32. Most members are able to express their thoughts clearly.	265	6.46	0.60
Q36. We try to capitalize on each other's strengths and compensate for one another's weaknesses.	267	6.51	0.60
Q39. Members feel valued and appreciated by one another.	263	6.41	0.77
Team Learning Conditions: Individual Expression (Range of Scores:3-18)	365	8.90	3.57
Q5. Members do not have the opportunity to define and develop the group's objectives.	111	2.71	1.79
Q11. Speaking one's mind is not valued.	94	2.29	1.65
Q17. People do not feel free to express their negative feelings about changes.	160	3.90	1.76
Team Learning Conditions: Operating Principles (Range of Scores:19-35)	1182	28.83	4.19
Q6. We find that we need to balance getting the task accomplished with building relationship among members.	224	5.46	1.78
Q12. Members take sufficient time to get to know each other before working on the task.	237	5.78	1.46
Q18. We are developing opinions, values, and guiding principles.	244	5.95	1.14
Q23. We spend much time gaining clarity around our purpose and structure.	210	5.12	1.38
Q28. We discuss our feelings as well as our thoughts.	267	6.51	0.60



## Appendix P

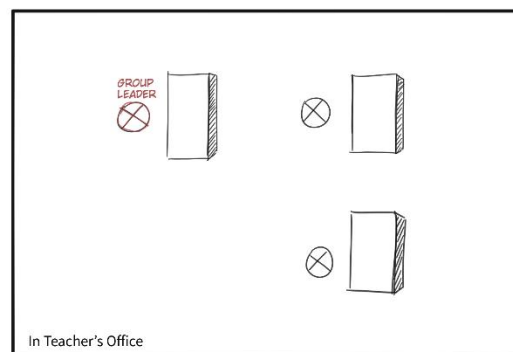
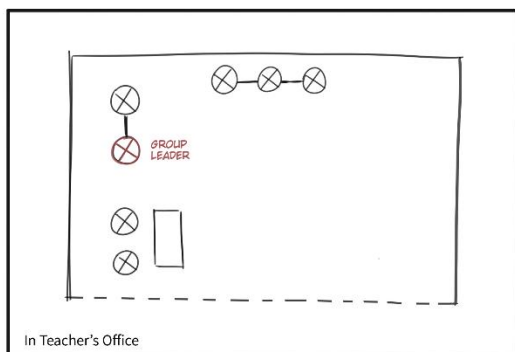
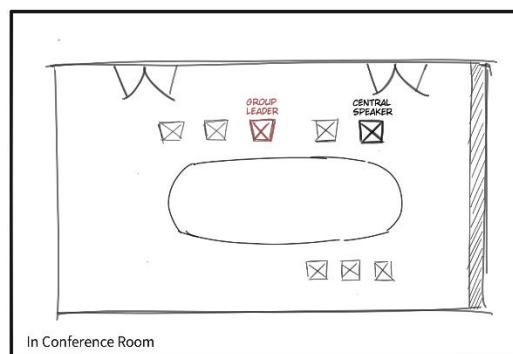
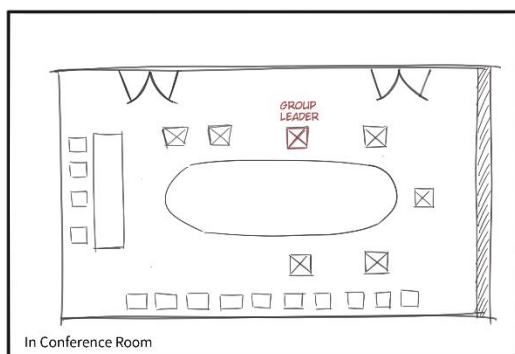
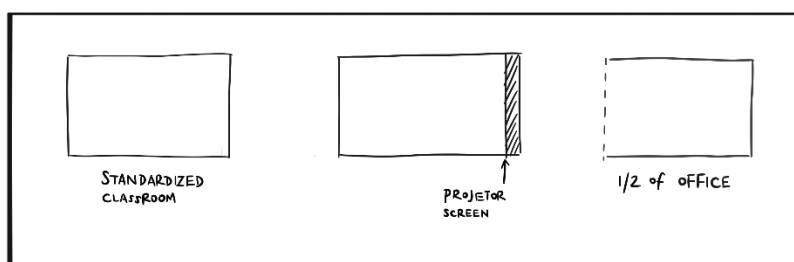
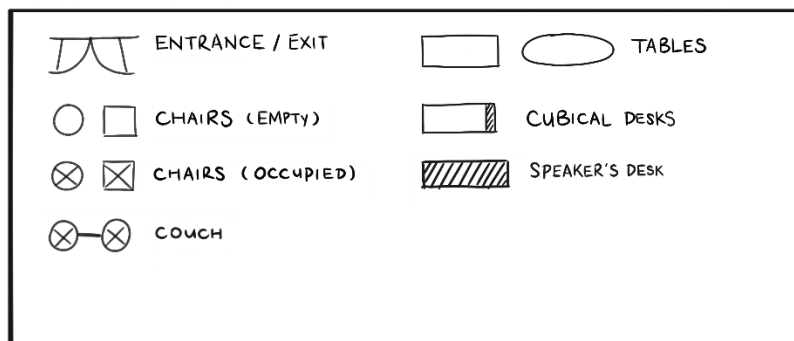
## Item Analysis of Reflection Questionnaire

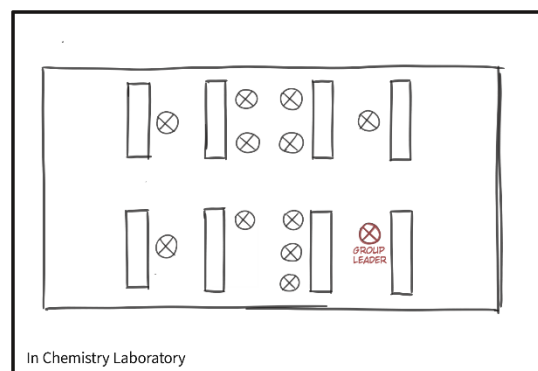
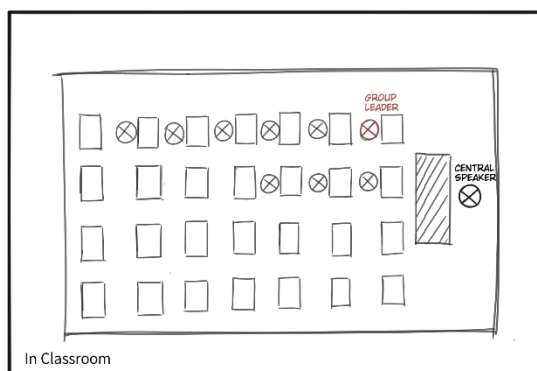
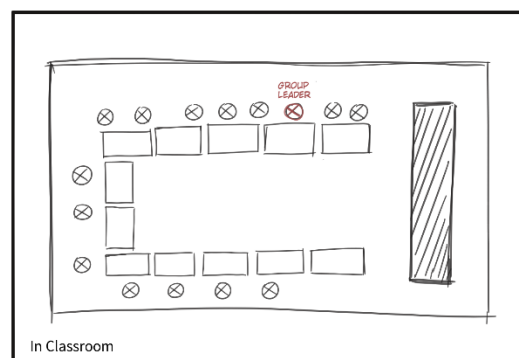
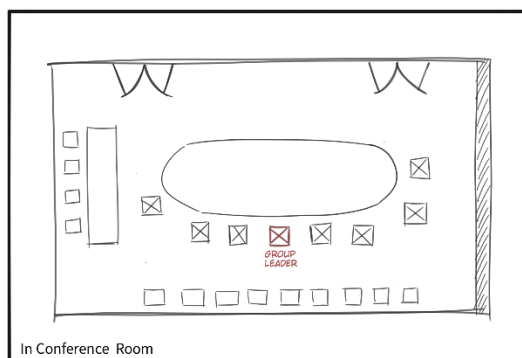
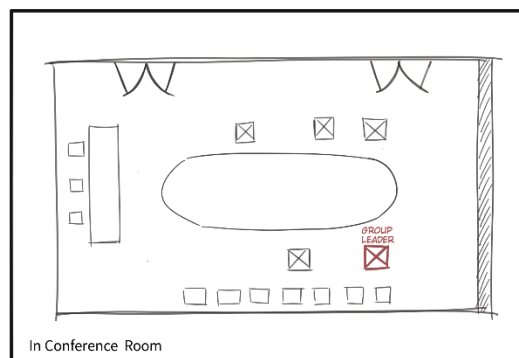
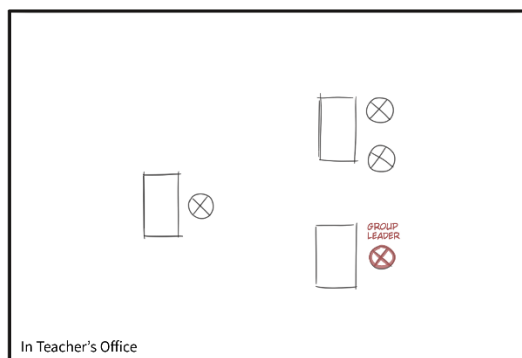
Scales and Items (Range of Responses: 1= lowest, 5=highest)	Sum (N=43)	Mean	Standard Deviation
Habitual Action (HA) (Range of Scores: 4-16)	349	8.12	3.1
Q1. When I am working on some activities, I can do them without thinking about what I am doing.	73	1.70	0.83
Q5. In this Lesson Preparation Group, we do things so many times that I started doing them without thinking about it.	100	2.33	1.04
Q9. The work of this Lesson Preparation Group doesn't require me to learn something new or think too much to accomplish the tasks in this group.	90	2.09	1.15
Q13. If I follow what the leader says, I do not have to think too much on this Lesson Preparation Group.	86	2.00	0.98
Understanding (U) (Range of Scores: 13-20)	751	17	2.1
Q2. This Lesson Preparation Group requires me to understand concepts taught by the leaders.	186	4.33	0.78
Q6. To successfully do the work assigned in this Lesson Preparation Group, I need to understand the new content (eg. ideas, concepts, practices).	189	4.40	0.62
Q10. I need to understand the information presented at this Lesson Preparation Group to apply it to my teaching practice.	190	4.42	0.50
Q14. In this Lesson Preparation Group, I have to continually think about the material that is being presented by the leader.	186	4.33	0.81
Reflection (R) (Range of Scores: 14-20)	770	18	1.7
Q3. I sometimes question the way others do something and try to think of a better way.	182	4.23	0.68
Q7. I like to think over what I have been doing and consider alternative ways of doing it.	191	4.44	0.63
Q11. I often reflect on my actions to see whether I could have improved on what I did.	198	4.60	0.49
Q15. I often reexamined my experience so I can learn from it and improve for my next teaching.	199	4.63	0.49
Critical Reflection (CR) (Range of Scores: 9-20)	658	15	2.6
Q4. As a result of this Lesson Preparation Group I have changed the way I look at myself.	162	3.77	0.87
Q8. This Lesson Preparation Group has challenged some of my firmly held ideas.	170	3.95	0.84
Q12. As a result of this Lesson Preparation Group I have changed my normal way of doing things.	184	4.28	0.67
Q16. From this Lesson Preparation Group, I discovered faults in what I had previously believed to be right.	142	3.30	1.12

## Appendix Q

## Observation Thumbnail Sketches

## KEY





## Appendix R

## Bilingual Quotations of Perceived LPG Group Leaders' Role

Participant Groups	Groups	Group Leaders' Age Ranges	Quotations
6 people or less	G5.S1	>50	<i>Did not mention</i>
	G6.S1	40-44	The group leaders have a modest attitude, and (the teachers) also respect these teachers with more experience. 备课组长还是比较谦虚的，（老师们）也比较尊重我们这些前辈。(GL6.S1)
	G7.S1	>50	<i>Did not mention</i>
	G8.S1	35-39	Actually, I think group leader is a difficult position to assume. Firstly, you don't have effective means to discipline the team members, however at the same time, you would also like to have everyone following the rules. I think it's hard. 因为备课组长其实我感觉是很难当的。因为第一你没有任何的东西来约束自己的组里面的各个组员，然后又想让大家按照这个规定来做事情，我觉得很困难(GL8.S1)
	G11.S2	30-34	I myself don't have a ton of experience. It's the first time I'm holding this position. On top of that, it's Grade 12. So, I didn't position myself or others didn't position me as the leader. It may very well be that they're quite busy while I have some time, so I became the group leader to take care of some miscellaneous tasks. 我因为本身可能经验也不丰富，又是第一次（当），又是高三，所以好像我也没有给自己定位，或者别人也没有给我一个定位成一个带领的这种角色，可能真的就是因为他们比较忙，我比较闲，所以我就当备课组长来处理一下这样的一些杂事。(GL11.S2)
Over 6 people	G1.S1	35-39	I think I've been assuming the role of a coordinator. So rather than leading the group and having everyone following my ideas, everyone contributes their ideas. Most of the time, I think my ideas work pretty well together with other teachers' ideas. I'll then be more confident in carrying out the tasks that follow. 我觉得在当中只是我觉得就是一个协调者的一个角色一样，就不是说我去统领什么东西，都是按照我的思路去做，这个我觉得就是说把大家的思路一块整合起来，然后可能很多时候我觉得我的想法有时候跟其他老师的想法都还是都能碰撞在一起都能 OK 的，然后那我觉得就更加有信心或者去做下面的事情。(GL1.S1) The group leader is not necessarily the smartest one or the one best at leading others. Sometimes it's just a role that falls upon the most willing, or because a person is younger, more energetic and more willing to take the responsibilities. 组长未必也是说他就是最聪明的那一个，或者是最能引领的一个，有时候它只是说别人都不干了，他干，然后或者说他更年轻，他更有活力，它更愿意承担。(G1T1.S1)

Participant Groups	Groups	Group Leaders' Age Ranges	Quotations
	G2.S1	35-39	<p>The LPG meeting is a bit similar to an administrative meeting. . . where the school has assigned a task formally to be completed at a location, with pictures taken. 备课组会只是略微一点点行政任务似的一个会. . .备课组活动会议只是说学校安排一个任务正式的把它在某一个地方完成拍点照片，实际上。(GL2.S1)</p> <p>The group leaders actually do not have a lot of authority. 备课组长他并没有那么大的权威。(G2T1.S1)</p>
	G3.S1	40-44	<p>The leader would say, you'll help me, right? That's it. When I'm asked to do this by a leader, they'd always say you need to help me. You don't have another option, right? So, it has to be done. On the one hand, you're maintaining your relationship with the leader, on the other hand, there are realistic issues at stake, right? So, you can't say no. 领导说，你要帮我哦，就从这一句话。几乎所有的领导让我干这个时候，都是说你要帮我，你不帮谁帮啊，你不干谁干啊，对吧，那就没办法了，就说一方面也确实是跟领导的这份情面，然后另一方面确实考虑到实际的问题，对吧？你就推脱不掉。(GL3.S1)</p>
	G4.S1	35-39	<p>You can say that a group leader of LPG does not count as a real leader. They simply lead everyone to achieve a goal – National College Entrance Exam. In high school, you can't set an alternative goal by yourself. The goal is clear - you need to find ways to improve the Chinese scores of this grade. 其实你说备课组长他不算是一个领导，他其实就是说能够带着大家一起达成一个目标，就大家都走向高考。因为高中又没有说你自己自设一个目标或者怎样。但他目标很清楚在那放着，你就是把怎样把这这个年级的语文成绩给提高上去。(GL4.S1)</p>
	G9.S2	45-49	<i>Did not mention</i>
	G10.S2	30-34	<p>I'm not yet at that level, where I can talk to them and ask them to do something. Everyone assumes their roles on the surface. 我的资历还不够到这种程度，就说我可以去找他谈，让他做一个什么可以，大家都是这种都是明面上过得去就行。(GL10.S2)</p> <p>I'm not yet on that level, and then for authoritative people, there aren't any teachers with a ton of experience in our school. On the other hand, teachers with a lot of experience would prefer not to be in charge. 我不够这个资历，然后权威的人咱们学校没有老资格的教师，老资格的教师也不爱管事。(GL10.S2)</p>

## Appendix S

## Group Variations in Approach to Central Speaker's Role and Reflection in Meetings

Participant Groups	Groups	Group Leader's Age Range	When did reflection happen	Central Speaker's Role	Sample Quotation(s) about Reflection in Meetings
6 people or less	G5.S1	>50	Post-exam analysis	Share practices	We hold (a LPG meeting) every week. Usually, more than 10 minutes will be spent reflecting our own issues in teaching. 我们每周都开（备课组会），所以大概可能十多分钟的时间，就是在反思自己教学中的一些问题。(G5T2.S1)
	G6.S1	40-44	Post-exam analysis	Share practices	<i>Did not mention</i>
	G7.S1	>50	When they discussed teaching problems	<i>Did not mention</i>	We would discuss the problems we encountered in the classroom, (I think) this is a type of reflection – what I encountered, why this problem happened, why this problem did not occur in your class. 大家会把就是自己教学中碰到一些问题拿出来去研讨，这其实也是一种反思，就是我上课碰到这样情况，为什么会出现这样的情况？而你为什么碰到的比较少？(G7T1.S1)
	G8.S1	35-39	The discussion topics did not encourage reflection	Enlisted to show the school	Telling the truth, it usually rare happen reflection at the Lesson Preparation Group meeting). I think the issues have to do with the energy level of each teacher, their enthusiasm, the allocation of time, and the various difficulties faced by each individual. I think it depends on how we spend efforts promoting it or working on the culture and rules. 实话实说比较少（在备课组会上进行反思）。我个人思考的问题就是比如说这里面涉及到每个老师的精力的问题，投入的热情的的问题，时间分配的问题，各个人有各个人的不同的元素的困难，我就是说这里边就要看我们怎么来花大力气的来倡导或者把风气各方面的制度。(G8T1.S1) Teaching reflection is probably mainly done privately by each individual. It is rarely discussed. 教学反思可能主要是自己在做，在讨论的情况下就比较少。(G8T2.S1)
	G11.S2	30-34	The discussion topics did not encourage reflection	Share prepared course materials	This reflection is basically absent on the general meeting level; it's more at the individual level. Some people have a good habit of reflection, and they grow faster. Engaging in reflection is a personal preference, nothing more than that. 这个反思在整个会议层面基本上不会有，更多的时候就是看个人，有的人习惯比较好，成长比较快，进行一个反思，就是个人喜好没有什么。(G11T1.S2)

Participant Groups	Groups	Group Leader's Age Range	When did reflection happen	Central Speaker's Role	Sample Quotation(s) about Reflection in Meetings
Over 6 people	G1.S1	35-39	Open lesson debrief sessions	<i>Didn't mention</i>	Regarding the teaching methods and events, there's basically no reflection, mostly self-directed. 关于教学方法和事件, 基本上都是不回顾的。都是自己发酵和成长。(G1T1.S1)
	G2.S1	35-39	<i>Did not mention</i>	Share practices	<i>Did not mention</i>
	G3.S1	40-44	Discuss students' problems	Share practices	For example, a teacher may propose that the students face certain issues in certain areas, or that there is insufficient implementation in certain areas. Everyone will then discuss it together and amend the issues later. This happens but it's not the essential piece. 比如说有老师提出来, 我们做的时候哪个地方比如学生有什么问题, 落实得不够好的可以提出来, 大家共同探讨, 后面可以再弥补一下什么的, 也是有的, 但是这种不是主要的吧。(G3T1.S1)
	G4.S1	35-39	Post exam analysis	Share practices	We normally rarely (reflect during the lesson preparation group meetings). 一般我们很少 (在备课组会上反思), 一般很少。(G4T2.S1)
	G9.S2	45-49	Veteran teachers shared their past experiences	Share prepared course materials	What happens more often is probably individuals reflecting on their own, rather than reflecting on themselves at the meetings. 更多的可能是个人反思, 不是在这个会议上自己的反思。(G9T1.S2)
	G10.S2	30-34	Open lesson debrief sessions; post-exam analysis	Share prepared course materials	Individual reflections on oneself would be more common. However, group reflection at lesson preparation group meetings does happen, usually after an exam, particularly after monthly exams, mid-term exams and end-of-the-term exams. 关于反思的话, 还是个人会做的比较多。如果要集体的备课组上的反思的话, 一般是在考试结束考试结束之后, 尤其是像这种月考, 还有期中考试和期末考试。(G10T2.S2)

## Appendix T

## Consistency Chart of Findings, Interpretations, Conclusions, and Implications

Findings	Interpretations	Conclusions	Implications
<b>Research Question #1.</b> How, if at all, do school leaders value and evaluate reflective practice in LPG meetings?			
<b>Finding #1. Goals of LPGs:</b> There were multiple goals cited by the school leaders, but one common goal cited by all school leaders was planning and unifying teaching progress and content. Other goals included sharing teaching strategies, differentiating teaching instructions, and determining students' homework.	<ul style="list-style-type: none"> <li>Given that there was one agreed upon goal, this goal may not require teachers to engage in reflection in the LPG meetings.</li> </ul>	If the commonly agreed goal does not require reflection, it is not surprising that the LPGs did not engage in reflective discussions.	All school leaders should be on the same page about the goals. They should reconsider if and why reflection is important. If reflection is considered important, then they should consider goals that require reflection. School leaders may consider the types of reflection that would meet the goals.
<b>Finding #2. Expected reflection moments:</b> School leaders expected teachers to engage in reflection through three means. These included reflection during weekly LPG meetings, reflection during open lesson debrief sessions, and individual written reflection in the teaching plan booklet.	<ul style="list-style-type: none"> <li>School leaders expected teachers to engage reflection on both individual level and group level.</li> </ul>	School leaders believed and expected that teachers should be reflective practitioners. The tasks that the school leaders assigned to teachers would be adequate to ensuring that reflection occurred.	If the school leaders expect teachers to be reflective practitioners, then the school leaders should consider modeling reflection in their school through everyday practices.
<b>Finding #3. Training for LPG group leaders:</b> Training varied in terms of opportunities and resources provided to the school. School 1 did not provide any formal training to group leaders, whereas School 2 offered training primarily related to the new college entrance exam in China ( <i>xingao kao</i> ). Neither school trained teachers in the skills needed to manage and facilitate LPG meetings.	<ul style="list-style-type: none"> <li>School leaders did not provide opportunities and resources to intentionally build the mindset and skillset for LPG group leaders to achieve the expected outcomes.</li> <li>The skill level of LPG group leader might be inconsistent.</li> <li>Considering the lack of training provided to LPG group leader, school leaders might pose unrealistic</li> </ul>	Formal training for LPG group leaders was absent. The LPG group leaders were not formally prepared to facilitate reflective discussions in LPG meetings, and many LPG group leaders may lack skillset required to facilitate reflective discussions.	Formal training should be in place and the training content should cultivate both mindset and skillset. LPG group leaders should develop their own reflective and be able to facilitate reflective practice.



Findings	Interpretations	Conclusions	Implications
	expectations on LPG group leader about what they could achieve in LPG meetings.		
<b>Finding #4. Assessment plans of reflection:</b> School #1 did not have any assessment plans toward reflection. Although several assessment plans toward reflection existed in School #2, those methods only assessed individual level reflection (e.g., individual semester reflection report).	<ul style="list-style-type: none"> <li>Both schools lack a definition of what reflection looks like and its behavioral indicators.</li> <li>LPG group leaders and teachers might not see the importance of engaging reflective discussions because they were not being assessed on it.</li> </ul>	Due to the lack of assessment plans, school leaders did not stress enough importance about reflection in LPG meetings to the school community.	If school leaders expect teachers engage reflective discussions in LPG meetings, then formal documents should be in place that outline the purpose and assessment criteria. Assessment plans and constructive feedback should be also considered.
<b>Research Question #2.</b> How do LPG group leaders prepare and facilitate LPG meetings with teachers?			
<b>Finding #5. Meeting preparation:</b> All LPG group leaders prepared the meeting by previewing the upcoming week's teaching content and teaching progress. Some other tasks cited by the LPG group leaders were identifying the upcoming week's teaching difficulties and students' homework. When LPG used a central speaker to lead partial discussions in the meetings, the LPG group leaders also coordinated with the central speaker to confirm the topic.	<ul style="list-style-type: none"> <li>The meeting content was aligned with the most mentioned goals of LPG.</li> <li>The LPG group leaders attended to plan and unify what's coming next but did not involve in-depth discussions on reviewing past teaching difficulties.</li> </ul>	LPG group leaders well-prepared teachers to come to the same understanding about what's coming next in teaching, but not in facilitating reflection about past teaching experiences.	As school leaders expected other goals (e.g. share teaching strategies, differentiating teaching instructions, determining students' homework) for the LPGs, the LPG group leaders should consider adding relevant content to meet those expectations.
<b>Finding #6. Discussion format and content:</b> LPG meetings' discussion format and content varied based on whether the LPG group leaders assigned a central speaker among teachers and whether the central speakers made adequate preparation.	<ul style="list-style-type: none"> <li>The LPG group leaders had autonomy to determine the LPG meetings' discussion format and content.</li> <li>The LPG group leaders made efforts to have teachers participate and share their thinking around teaching in LPG meetings by assigning a central speaker.</li> </ul>	The LPG group leaders have the responsibility to take an active role in selecting and supporting the central speakers' preparation.	The LPG group leaders should educate central speaker with clear expectations to ensure the consistent quality of discussions in LPG meetings. The central speakers' professional knowledge and their preparedness of the presentation could influence the quality

Findings	Interpretations	Conclusions	Implications
			of discussion in LPG meetings.
<b>Finding #7. Discussion challenges from teachers' perspectives:</b> Group meeting discussion challenges included the lack of advance preparation on the discussion topic and the lack of in-depth discussions in the LPG meetings.	<ul style="list-style-type: none"> <li>Teachers perceived that the LPG group leader did not provide adequate information about the upcoming LPG meeting's agenda.</li> <li>Teachers perceived that the LPG group leader did not facilitate discussions that encouraged in-depth discussions on teaching practices.</li> <li>LPG group leader lacked protocols to guide in-depth discussions.</li> </ul>	The LPG group leaders were reluctant to deal with the group dynamics challenges, and they did not have skills to create agenda, facilitate discussion, and use protocols to support group discussions.	The LPG group leaders should have understandings about the teachers' needs and expected outcomes from engaging discussions in the LPG meetings. They should be able to design and facilitate discussions using protocols.
<b>Finding #8. Facilitation challenges from LPG group leaders' perspectives:</b> LPG group leaders facilitation challenges varied in terms of teachers' attitudes toward group collaboration and their willingness to share teaching practices with others. Younger LPG group leaders presented difficulties in solving such facilitation challenges.	<ul style="list-style-type: none"> <li>The LPG group leaders perceived that teachers presented various attitudes toward group collaboration.</li> <li>Teachers might hold different understandings and agreements about the purpose of LPG meetings.</li> <li>Teachers' willingness to share teaching practices with others varied because they may not feel safe in expressing negative feelings or thought with others.</li> <li>Younger LPG group leaders were not yet ready to address group dynamics challenges.</li> </ul>	The LPG group leaders were reluctant to deal with the group dynamics challenges.	Group learning conditions would be jeopardized when LPG group leaders are not able to meet the challenges. The LPG group leaders should be prepared and proactive in solving group dynamics challenges to ensure healthy group learning conditions. The LPG group leaders should build trust and psychological safety to create safe space for expressing negative feelings. Group norms could be used to govern how teachers are expected to work collaboratively and share practices.
<b>Research Question #3.</b> How do teachers experience the actions of LPG group leaders in facilitating reflective practice in their LPG meetings? Do they report reflecting critically on their work as a result of their reflective practice in LPG meetings, and if so, what helped them to do so?			
<b>Finding #9. Reflection in LPG Meetings:</b> Teachers reported that they engaged in reflection on occasion,	<ul style="list-style-type: none"> <li>Post exam analysis and open lesson debrief sessions provided</li> </ul>	Teachers' experience toward reflective practice in LPG meetings	LPG group leaders should include elements such as guiding questions,

<b>Findings</b>	<b>Interpretations</b>	<b>Conclusions</b>	<b>Implications</b>
<p>like post exam analysis and open lesson debrief sessions. Group leaders did not lead discussions that encourage reflection as a routine in LPG meetings.</p>	<p>opportunities for teachers to examine on past teaching performance and practices. During these two types of events, they also discussed interventions.</p> <ul style="list-style-type: none"> <li>• Teachers engaged in reflective discussions when guiding questions were provided.</li> <li>• Teachers engaged in reflective discussions when they specifically talked about what could be changed in their practices. They ended meetings with action steps.</li> </ul>	<p>depended on the type of LPG meetings held. When meetings were designed to reflect on past teaching with specific data to discuss, teachers engaged in reflective discussions as a group.</p>	<p>student data, and action steps when they design LPG meetings to encourage frequent reflective discussions.</p>